S. HRG. 109–960

S. 1265, THE DIESEL EMISSIONS REDUCTION ACT OF 2005

HEARING

BEFORE THE

SUBCOMMITTEE ON CLEAN AIR, CLIMATE CHANGE AND NUCLEAR SAFETY

OF THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS UNITED STATES SENATE

ONE HUNDRED NINTH CONGRESS

FIRST SESSION

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ONE HUNDRED NINTH CONGRESS

FIRST SESSION

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C O N T E N T S

S. 1265, THE DIESEL EMISSIONS REDUCTION ACT OF 2005

TUESDAY, JULY 12, 2005

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON CLEAN AIR, CLIMATE CHANGE,
AND NUCLEAR SAFETY,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:30 p.m. in room 406, Senate Dirksen Building, Hon. George V. Voinovich (chairman of the subcommittee) presiding.

Present: Senators Voinovich, Clinton, Inhofe, Jeffords, Isakson, and Carper.

Senator VOINOVICH. Good afternoon.

This hearing will come to order.

OPENING STATEMENT OF HON. GEORGE V. VOINOVICH, U.S. SENATOR FROM THE STATE OF OHIO

This hearing is very special because a diverse, bipartisan group has come together to advance a policy that will significantly improve air quality in this Nation and impact better public health and our environment.

I am pleased to showcase this collaboration today through this hearing on S. 1265, the Diesel Emissions Reduction Act of 2005, which is cosponsored by several members of this committee, including Senators Carper, Inhofe, Jeffords, Isakson, Lieberman, Lautenberg, Obama, Murkowski, Clinton, Chafee and DeMint.

Our witnesses represent the cross-section of environmental, industry and public officials who worked together to develop this legislation and I want to publicly thank them for all of the effort they have put in together to bring us to where we are today. It is rare for so many different members of organizations to agree on an issue, particularly when it can make a real difference.

We will hear from Federal, State and local officials, including Ohio Environmental Protection Agency Director Joe Koncelik, an environmental group, an engine and control technology group and manufacturers. We unfortunately cannot have every supporter testify, so I ask unanimous consent to insert into the record letters and testimony from several groups, ranging from the Environmental Defense to Associated General Contractors of America, and the National Conference of State Legislatures into the record.

The process for developing this legislation began last year when several organizations met with me. They informed me that the full benefit of the EPA's 2001 Highway and 2004 Non-road Diesel En-

gine rules will not be finalized until 2030 because the regulations address only new engines and the estimated 11 million existing engines have a long life.

They shared with me several successful grant and loan programs, such as those in California and Texas, that have been working on a voluntary basis to retrofit diesel engines. This intrigued me, especially because the Nation's 495 and Ohio's 38 non-attainment counties need help to meet the new ozone and particulate matter air quality standards. We then formed a strong, diverse coalition and developed the Diesel Emissions Reduction Act of 2005.

This bill will establish voluntary national and State-level grant and loan programs to promote the reduction of diesel emissions; it authorizes $1 billion over 5 years, $220 million annually for the retrofitting and replacement of diesel engines. This funding is fiscally responsible as diesel retrofits have proven to be one of the most cost-effective emissions reductions strategies. This is clear when you compare the cost effectiveness of diesel retrofits to current Congestion Mitigation and Air Quality Program projects.

In other words, lots of projects are competing for Federal dollars, but there are very few that you can really get a good cost benefit. This program does that.

Per ton of nitrogen oxides reduced its cost on average. In some of the other programs, this will cost $126,000 for alternative fuel buses, cost per ton of reducing nitrogen oxides; $66,000 for signal optimization; and $10,500 for van pool programs. We have heard about some of these. This is compared to $5,390 to repower construction equipment and $5,000 to retrofit a transit bus. The bottom line is that if we want to clean our air to improve the environment and protect public health, diesel retrofits are one of the best uses of taxpayers' money.

The Diesel Emissions Reduction Act of 2005 enjoys broad bipartisan support and was passed as an amendment to the Energy bill by a vote of 92 to 1. However, I think the bill is too important for us to wait until the Energy bill is signed into law. I urge this committee to act on this bill soon so that we can get it on the calendar and passed as soon as possible.

I thank everyone for attending and look forward to hearing from the witnesses. I am very pleased that the chairman of our committee is here with us today, Jim Inhofe. Jim, I know you are busy working on the Conference Committee on the Highway bill. I am really honored that you took time from that schedule to come.

Senator INHOFE. Thank you, Mr. Chairman.

OPENING STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

That is going on right now, and is the reason I won't be able to stay for the duration of this hearing, but I do appreciate your holding the hearing on the legislation to reduce diesel emissions. I am encouraged that this bipartisan legislation will have a considerable and cost-effective impact on our efforts to further an already significant progress we have made in improving air quality of the past few decades.

You hear so much now about pollution and how bad things are that you don't realize that in the last 30 years, air pollution was

at that time double what it is today. It has been a real success story and we need to build on those successes and certainly in the area of diesel engines, that is very important. Diesel engines are the core of the Nation's infrastructure. These engines power freight trucks, buses, tractors and a wide variety of other farm construction and specialty equipment. As you are aware, Mr. Chairman, they are even getting into diesel engines in aviation right now.

On-road and off-road diesel engines rules were finalized in 2001 and 2004 that will cut emissions by diesel engines dramatically—by more than 80 percent. So often you hear people say really good things aren't happening. The President had the act that would have mandated a 70 percent reduction in all three of the air pollutants and we were unable to get that finalized and I hope we will be able to do it.

Having been a former mayor, as you, we don't want to do this with just Federal mandates. Certainly unfunded mandates are the greatest problem some of our cities produce. I think this is a good approach to it. The cost benefit ratio of 13 to 1 of the Diesel Emissions Reduction Act simply makes sense. It authorizes $1 billion over 5 years, leverages an additional $500 million from matching State funds and will in addition reduce nitrogen oxides and cut particulate matter by an estimated 70,000 tons, so I am glad to be a cosponsor of this legislation and will work to try to make it a reality.

[The prepared statement of Senator Inhofe follows:]

STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Mr. Chairman, thank you for holding this hearing on this legislation to reduce diesel emissions. I am encouraged that this bipartisan legislation will have a considerable and cost-effective impact on our efforts to further the already significant progress we have made in improving air quality over the last few decades.

Just 30 years ago, air pollution was more than double what it is today. But we can no longer rely on the command-and-control approach associated with much of the Clean Air Act. Instead, we must look to solutions that get the biggest emissions reduction possible for every dollar spent. This legislation does just that.

Diesel engines are at the core of our nation's infrastructure. These engines power freight trucks, buses, tractors, and a wide variety of other farm, construction, and specialty equipment. But as would be expected from such widespread use, these engines are responsible for a significant percentage of the mobile source nitrogen oxides.

On-road and off-road diesel engine rules were finalized in 2001 and 2004 that will cut emissions by diesel engines dramatically—by more than 80 percent—but these rules will not affect the millions of diesel engines already on the road. Many trucks are driven more than a million miles before they are retired.

Nearly 500 counties are in non-attainment with the national ambient air quality standards for ozone and particulate matter. Yet existing diesel engines will continue to contribute to the problem despite the progress that has been made in developing new state-of-the-art clean diesel engines.

What is needed is a cost-effective, voluntary program that builds on the successful state programs already underway to reduce pollution from these sources. Such legislation would help localities meet their clean air requirements and yield enormous health benefits at a fraction of the cost of what would be needed to obtain the same benefits through command-and-control regulations.

The approach taken in this legislation is similar to that taken in an amendment to the Highway bill that I sponsored to promote clean school buses. The Diesel Emissions Reduction Act builds on existing state and local programs to retrofit and replace older engines so that localities have flexibility in coming into attainment. With the submission of State Implementation Plans fast approaching, enacting the legislation soon is crucial.

By creating grant and loan funding to reduce diesel emissions, this legislation does not suffer from many of the shortcomings of the existing Clean Air Act. Whereas command-and-control mandates often are unnecessarily costly and ineffective at reducing emissions, this type of program directly targets cost-effective sources for cutting emissions.

At a cost-benefit ratio of 13 to 1, the Diesel Emissions Reduction Act simply makes sense. It authorizes $1 billion over 5 years, leverages an additional $500 million from matching state funds and will, in addition to reducing nitrogen oxides, cut particulate matter by an estimated 70,000 tons. If we are to impose strict air quality requirements upon our localities, then we must acknowledge that these requirements will impose significant burdens on them. This legislation implicitly acknowledges this fact and assists these areas in meeting those obligations.

I am glad to be a cosponsor of this legislation and look forward to hearing testimony today.

Senator VOINOVICH. Thank you very much, Senator Inhofe.

Senator Clinton, would you mind, Senator Isakson said he has to leave. Thank you.

Senator Isakson.

OPENING STATEMENT OF HON. JOHNNY ISAKSON, U.S. SENATOR FROM THE STATE OF GEORGIA

Senator ISAKSON. Thank you, Senator Clinton. I do apologize and I will try and return for most of the hearing but I do have to slip out for a second.

I want to thank you, Mr. Chairman, for allowing me to be here today and for introducing S. 1265. I commend you and particularly your staff member, Brian, and the great work they did in drafting this legislation and bringing a true bipartisan bill to the U.S. Senate.

In my State of Georgia, 28 of 159 counties are in non-attainment and most recently Catoosa, Walker and Muskogee fell in that category, not typical counties in that they are densely populated but typical because they have interstate highways running through them and tremendous truck traffic that goes through and generates an awful lot of diesel emission. That is why I am so proud to be a part of this legislation which creates incentives to deal with that exact problem.

This legislation, which was drafted in cooperation with environmental, industry and public officials would establish voluntary, national and State-level grant and loan programs to promote the reduction of diesel emissions. Passage of the provisions included in this bill would help communities especially in my State of Georgia attain the air new quality standards, significantly improve the environment and protect the public health.

I look forward to working with the chairman and the other members of the committee on the passage of this bill and thank the chairman for his leadership in doing so.

[The prepared statement of Senator Isakson follows:]

STATEMENT OF HON. JOHNNY ISAKSON, U.S. SENATOR FROM THE STATE OF GEORGIA

Thank you, Chairman Voinovich, for holding this hearing. I would like to thank you for your efforts and the efforts of your staff, especially Brian Mormino, in the drafting of this well crafted bipartisan legislation. I am proud to be an original cosponsor of this legislation. My comments will be brief as I have another commitment.

In my State of Georgia 28 of 159 Counties, including Walker and Catoosa Counties in the mountains, through Metro Atlanta, and down to Muscogee County and

the Metro Columbus area, are in non-attainment for particulate matter. Twenty-two of 159 counties over the same geographic area are in non-attainment for ozone. In fact, about 60 percent of Georgia's population lives in a non-attainment area. We have impaired waters from high mercury levels and, in a State where we celebrate the outdoors, over half of Georgia's lakes and rivers have mercury-based fish consumption advisories.

This legislation, which was drafted in cooperation with environmental, industry, and public officials, would establish voluntary national and State-level grant and loan programs to promote the reduction of diesel emissions. Passage of the provisions included in this bill would help communities, especially in my State of Georgia, attain the new air quality standards, significantly improving the environment and protecting public health.

I am hopeful the Congress will pass the provisions included in this legislation, and pledge to work with you Mr. Chairman to make that happen. I apologize for not being able to stay for the duration of the hearing, but thank you for calling it.

Senator VOINOVICH. Thank you very much.

Senator Clinton.

OPENING STATEMENT OF HON. HILLARY RODHAM CLINTON, U.S. SENATOR FROM THE STATE OF NEW YORK

Senator CLINTON. Thank you very much, Mr. Chairman.

Again, I really congratulate you for your leadership in developing and introducing the Diesel Emission Reduction Act of 2005. It has been a pleasure to have my staff, yours and others work on this and it is a great testament to the ability to get things done when we can find common ground.

My interest in this issue goes back to the beginning of my tenure in the Senate when I joined with former Congressman Amo Houghton and others to push for appropriations for the EPA's Clean School Bus USA Program. We were able to secure $5 million and then to build on that but it became very clear to me that most school districts were not going to be able to afford to buy new buses, yet the diesel emissions increasingly concerned them. Using technology now available was a win-win. It was cheaper, they could install it and they could cut emissions at the same time.

Your bill goes just light years ahead of anything that we have been able to achieve beforehand. There are many reasons why this is significant legislation. Lots of times around here only the controversies get attention, but this has the potential to be such a positive step forward for everyone who cares about clean air, who cares about the manufacturing future of our country because this is technology that will really spur manufacturing here at home.

The good news is we have a range of cost-effective technologies to reduce emissions from the existing diesel fleet. I am very proud that Corning, a New York manufacturer of global renown, is a leader in this area. Corning developed and produces the cellular ceramic particulate filters that are at the heart of diesel retrofit technologies. So this to me is a win-win not only for the environment but also for our economy.

I am also concerned, however, Mr. Chairman, that we should, with the same bipartisan support that we used to add this to the energy legislation, go ahead with your plan of doing it as a separate bill to get it passed and try to get it implemented as soon as possible. Therefore, I would hope the Administration would reconsider their position and support the funding levels you set forth in the Act because there is a great need for us to move as quickly as possible to implement this technology.

There is an additional related issue and that is going to be mentioned later in the testimony of Mr. Cross. The importance of sticking to the ultra-low, sulfur diesel fuel schedule and rule as currently written. Cummins and other engine manufacturers have invested billions of dollars in research and development of the next generation of clean diesel engines.

I really applaud them because they have struck out and basically done what they thought was right and believe there is a market for this. Some of these engines will actually be produced in Cummins' plant in Jamestown, NY, but the engines can't meet the emissions standards that will take effect in 2007 and beyond without the ultra-low, sulfur diesel fuel.

I was concerned when EPA delayed implementation of the ultra-low, sulfur diesel rule by 45 days. I strongly disagree with this extension, but I am certain that it should give more than enough additional time for all parties in the fuel supply chain to meet the rule. After all, the deadline should not come as a surprise, it has been in the making for years now.

I really hope in conjunction with passing this very important legislation as a stand alone bill, we can recognize the importance of the rule and put the Administration on notice that we should not permit any additional delays. This is something we can move on and as I said, it is not only a win for the environment, it is a win for American manufacturing.

I for one believe we ought to incentivize American manufacturing, we ought to reward independent efforts like that of Corning and Cummins who are out there doing the work that will create technology, that will create jobs, that will create American exports.

For all these reasons, Mr. Chairman, I am delighted to be a cosponsor and very grateful for your leadership on this important legislation.

Senator VOINOVICH. Thank you, Senator Clinton.

I agree with you in terms of the deadline and in terms of the impact of the rule going into effect. The manufacturers in this country have spent almost $2 billion in preparation for this rule. I think we should stick to the deadline that has been set.

I also agree with you that in terms of the expenditure of money, particularly in light of the cost benefit, that this is a program that really should be supportive. I know there are some other things that they are not supportive of but if we are going to really make some headway in terms of reducing emissions, this is one of the best and probably one of the best investments they can make because not only will we get the money from the Federal Government but we calculate that another half billion dollars will be generated from the private sector or from local and State Government. So it is something we really need to put the pressure on and make sure the dollars are there to get it done.

Senator Jeffords.

OPENING STATEMENT OF HON. JAMES M. JEFFORDS, U.S. SENATOR FROM THE STATE OF VERMONT

Senator JEFFORDS. Senator Voinovich, thank you very much and thank you, Senator Clinton, for an excellent statement.

I am pleased the subcommittee is holding a hearing today on S. 1265, the Diesel Emissions Reduction Act of 2005. I applaud the work of Senators Voinovich and Carper in this measure. I am also a cosponsor of this legislation because I believe that the Federal Government must do more to protect public health from toxic diesel emissions, particularly from the old diesel engines still in use today.

This is bipartisan legislation and already included in the Senate-passed Energy bill by an overwhelming vote. Several thousand people are dying every year because of the exposure to diesel exhaust. This is especially true in higher urbanized and poorer areas of the country where people often have the least supportive public health and medical services. These are people who can least afford exposure to the hazardous mix of cancer causing agents and respiratory irritants.

According to the study done by the Clean Air Task Force, ably represented by Mr. Schneider today, over two-thirds of the United States has a cancer risk greater than 100 in a million from diesel exhaust. Residents in 11 urban counties face a diesel cancer risk 10 times that high. There are millions of diesel engines operating on our highways, railroads and harbors, as well as generating emergency electricity, and moving non-road vehicles and equipment to build new roads and buildings. These engines are essential to our economic life.

As other sources are being controlled, diesels are becoming a greater share of the air quality burden in many areas. They contribute significantly to non-attainment in the fine particulate matter or the $PM_{2.5}$ standard. Some of the damage from existing diesels will decline as the Nation moves forward towards lower sulfur diesel fuel in late 2006. However, the existing millions of diesel engines will continue chugging along for years if not decades before they are replaced with cleaner, less polluting technology. That is why this bill is necessary.

This bill authorizes $1 billion to retrofit these old engines and promotes development of cleaner technology. This is really just a drop in the bucket of what is necessary and what is warranted given the huge benefits to public health. Unfortunately, this Congress is poised yet again to cut the President's gradually dwindling budget request for diesel retrofit activities. Even the Clean School Bus Retrofit Program, which everyone supports, will barely get enough to get the wheels going around. A voluntary, incentive-based approach to the problem of diesel emissions is preferred by many.

If the incentives are inadequate or unfunded, then it may be time to consider giving EPA or the States sufficient clear authority to impose higher emissions standards on the existing fuel of diesel engines. There is very little question that the benefits would outweigh the costs of such regulation. That fact is made even plainer by the growing scientific evidence that the current PM standard must be more stringent to protect public health.

Finally, I would like to note for the record that EPA's very serious delay in proposing a rule for implementing the fine particulate matter standard is delaying the States' efforts to protect public health and achieve that standard. There is no excuse for this unac-

ceptable delay. The States may well choose to adopt diesel retrofit efforts like those promoted by this bill, but EPA's tardiness in completing this important rule and guidance is slowing down clean technology development and delaying very significant health benefits.

Today's diesel emissions are toxic and contribute to non-attainment. We should move to reduce them on every front.

Thank you, Mr. Chairman.

[The prepared statement of Senator Jeffords follows:]

STATEMENT OF SENATOR JAMES M. JEFFORDS, U.S. SENATOR FROM THE STATE OF VERMONT

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This bipartisan legislation has already been included in the Senate passed Energy bill by an overwhelming vote. Several thousand people are dying every year because of exposure to diesel exhaust. This is especially true in highly urbanized and poorer areas of the country where people often have the least supportive public health and medical services. These are people who can least afford exposure to this hazardous mix of cancer causing agents and respiratory irritants.

According to a study done by the Clean Air Task Force, ably represented by Mr. Schneider today, over two-thirds of U.S. counties have a cancer risk greater than 100 in a million from diesel exhaust. Residents of eleven urban counties face a diesel cancer risk ten times that high. There are millions of diesel engines operating on our highways, railroads and harbors, as well as generating emergency electricity, and moving non-road vehicles and equipment to build new roads and buildings. These engines are essential to our economic life.

But, as other sources are being controlled, diesels are becoming a greater share of the air quality burden in many areas. They contribute significantly to non-attainment of the fine particulate matter or $PM_{2.5}$ standard. Some of the damage from existing diesels will decline as the nation moves toward lower sulfur diesel fuel in late 2006.

However, the existing millions of diesel engines will continue chugging along for years if not decades before they are replaced with cleaner, less polluting technology. That is why this bill is necessary. This bill authorizes one billion dollars to retrofit these old engines and promotes development of cleaner technologies. That is really just a drop in the bucket of what is necessary and what is warranted given the huge benefits to public health.

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But, if the incentives are inadequate or unfunded, then it may be time to consider giving EPA or the states sufficiently clear authority to impose tighter emission standards on the existing fleet of diesel engines. There is very little question that the benefits would outweigh the costs of such regulation. That fact is made even plainer by the growing scientific evidence that the current PM standard must be more stringent to protect public health.

Finally, I would like to note for the record that EPA's very serious delay in proposing a rule to implement the fine particulate matter standard is delaying the states' efforts to protect public health and achieve that standard. There is no excuse for this unacceptable delay. The states may very well choose to adopt diesel retrofit efforts like those promoted by this bill.

But EPA's tardiness in completing this important rule and guidance is slowing down clean technology development and delaying very significant health benefits. Today's diesel emissions are toxic and contribute to non-attainment. We should move to reduce them on every front.

Senator VOINOVICH. Thank you very much, Senator Jeffords.

Our first witness today is Wayne Nastri. Wayne is the Region IX Administrator for the U.S. EPA. Mr. Nastri, you have an interesting region, Arizona, California, Nevada and Hawaii. I know at least one of those States has some real pollution problems.

Mr. NASTRI. It also includes all the Pacific and 147 environmental tribes, Mr. Chairman.

Senator VOINOVICH. We appreciate that you are here and I would like to make clear to all the witnesses that we would like you to limit your statement to no more than 5 minutes. For members of the committee, I think we will try and have at least one round of questions. We do have several witnesses here today that have come long distances, so we want to make sure we give them adequate time to testify and then ask them questions.

Mr. Nastri, thank you for being here. We look forward to your words.

STATEMENT OF WAYNE NASTRI, REGION IX ADMINISTRATOR, U.S. ENVIRONMENTAL PROTECTION AGENCY

Mr. NASTRI. Thank you, Mr. Chairman and members of the subcommittee, it is a real pleasure to be here today representing my colleagues at EPA.

Let me begin by saying we support the goals of the Diesel Emissions Reduction Act of 2005. As you noted in earlier statements, over 400 counties aren't in attainment for ozone with the new 8-hour standard. Over 200 counties aren't in attainment for the PM standards. The health effects of diesel exhaust, specifically fine particulate matter exposure, are well chronicled and well known. Addressing these risks is a priority for the Administration and is why we have developed strong standards for new diesel engines.

In addition, the President has requested in his budget $15 million for advanced diesel retrofits, $10 million for the Clean School Bus USA Program and $9 million for the CARE Program which is the Community Action for Renewed Environment dealing with localized toxics.

Our strategy to address diesel emissions has been twofold, utilization of regulatory and voluntary programs. From a regulatory perspective, we have developed new regulations for on-highway and off-road engines that will become effective in 2007 and 2014. These regulations apply to new vehicles and will provide cleaner fuels and cleaner burning engines and when fully implemented, will provide over $150 billion in health benefits.

It is noted though the challenge that we face is that diesel engines are long-lived, having life spans of 20, 30 and even 40 years in some cases. There are approximately 11 million engines that are currently in use that emit high levels of pollution that can be reduced in terms of their emissions. We can do that through the use of newer control technologies and cleaner fuels.

We are using voluntary programs to address these 11 million engines and we are doing it to achieve immediate emission reductions and benefits. Voluntary programs are among the most cost-effective strategies for addressing diesel emissions within existing fleets and provide a health benefit to cost ratio of up to 13 to 1.

The National Clean Diesel Campaign has been devoted to aggressively reducing diesel exhaust through various control strategies

with active involvement of our national, State and local partners. Programs such as EPA's, Voluntary Diesel Retrofit Program and SmartWay Transport Partnership have established several hundred projects that involve cleaner fuel, idle reduction and other environmental control strategies.

We launched the National Clean Diesel Initiative. We determined that various sectors provide the best opportunities, those being port construction, freight and agriculture, in addition to the school buses being a top priority given the relative risk to children.

Coming from the region, I believe the action is where the rubber hits the road and that is at the local level. In Regions IX and X in the west, we have developed the West Coast Collaborative. It is an ambitious public-private partnership that brings leaders from Federal, State and local governments together. It brings together the private sector and environmental groups from such States as Alaska, Washington, Oregon and California. We have also reached out to Canada and Mexico and Idaho and Arizona are now participating in this collaborative.

In fiscal year 2005, we will implement 16 projects with $1.3 million in Agency funding and over $5.6 million in matching funding. We are able to generate a fourfold leveraging factor through these programs in order to bring about retrofit programs on diesel engines with PM traps, as well as looking at biodiesel additives to reduce NOx as well as looking at the implementation of LNG powered locomotives in the ports of Los Angeles and Long Beach.

There are many other examples of regional collaboratives, the Midwest Clean Diesel Initiative, the Northeast Diesel Collaborative, as well as at the local level where we have the mid–Ohio Regional Planning Commission which also formed a Diesel Emissions Subcommittee, again with representatives from a broad variety of stakeholders.

There are numerous programs in the States that have been very successful. California has the Carl Moyer Program where they have been able to actually bring about funding to reduce emissions and also Texas which you will hear more about later with their emissions reduction program. Washington set aside funding for their school bus emissions reductions.

We have learned the lack of capital can be a significant obstacle to implementing these diesel emission reduction activities. We have also learned that Federal oversight helps target projects in those areas of need, it also makes sure of the air quality benefits and maximizes public health benefits as well. We have also learned that the program matching funds is an important incentive.

As I said earlier, reducing emissions from older diesel engines is one of the most important air quality challenges facing the country. We have a good regulatory program in place that will help provide important clean air and health benefits for years to come. Through the use of voluntary programs like the National Clean Diesel Campaign and regional collaboratives, we can obtain immediate reductions and health benefits.

Without a doubt, the technology is available and most importantly, there is broad support for these programs. While we support the efforts to reduce emissions, we are concerned that the funding authorization in this legislation exceeds the funding called for in

the President's 2006 budget. Having said that, we certainly look forward to working with you and with members of the committee to address the public health goals of the legislation consistent with the fiscal constraints we must confront.

Thank you again for your leadership on this important issue and affording me the opportunity to speak on behalf of the EPA today. That concludes my remarks and I am prepared to answer any questions.

Senator VOINOVICH. Thank you very much, Mr. Nastri.

I am sure you had to have your testimony reviewed by the Environmental Protection Agency. I would hope those of you in the field would do whatever you can to impress upon Mr. Johnson and the Administration, particularly those at OMB, that this is a reasonable sum of money and really if you look at it in terms of its adequacy, it is inadequate but it does move us down the road which is what we want to do.

In your statement, you justify the need for this bill and for significant Federal investment and you state, "Lack of capital can be an obstacle to implementing diesel emission reduction activities." I am not going to go into it but I know the position you are in. I am a deficit hawk and I believe in working harder and smarter. I have to tell you this legislation and the money we spend will allow us to work harder and smarter and do more with less. It is a very, efficient piece of legislation. Again, I hope you will talk to some of your administrative friends to see if we can't get the Administration's attention on this.

You have a lot of counties, I am sure, in your region that aren't meeting probably the current emissions standards and are going to have a very difficult time meeting the new ambient air standards for ozone and particulate matter. They are going to need help.

Mr. NASTRI. That is correct.

Senator VOINOVICH. This is a great way for them to get help, especially for some of your Governors when putting together their State implementation plans, being able to fold in this kind of voluntary program I think would help them a great deal in terms of achieving what we all want, to get their emissions to meet standards by 2010.

EPA clearly has a lot of experience and in your testimony, you mentioned some lessons learned. These lessons are very important to this committee as we move forward with the legislation. Can you elaborate on what lessons are important to be included in Federal legislation and whether you think Senate bill 1265 includes them? Are there some things you think we should have in here that we don't?

Mr. NASTRI. I think the language you have is sufficient. I would say the things we always deal with from the lessons learned are issues of leadership, making sure you have someone committed to making sure people are at the table trying to actually negotiate what are the best projects, what are the best programs. You need commitment, you need to make sure because it is so difficult in the field to bring together all the parties to make them concentrate. Often you will have parties who come to the table and say, you can't do this and you can't do that. We need to make sure we provide leadership that says, this isn't a question about what we can't

do, it is a question about what can we do. If the issue is funding, we need to make sure we can identify what those funding needs are.

When we look at putting out the collaborative grants funding application, we get a demand that exceeds the funds we have by over tenfold. The fact we are able to leverage though in some cases up to fourfold, I think is a strong testament to the support we have from other parties that are willing to step up to the table and say, if EPA provides that leadership and is bringing together these different groups, then that is something we will take notice of and we want to be at the table participating.

I think the other issues we have learned are you have to have a sustained education and outreach program. It is so important to go out to all the different States and different localities, whether they are in attainment or not, because you still have localized toxic issues you have to deal with.

Those traits, leadership, commitment, education, outreach, are key, I think, examples or key ingredients of a successful program.

Senator VOINOVICH. Could you give me an example of the four to one leveraging you talked about?

Mr. NASTRI. Within the region, we solicited funding. We had $1.3 million in funding and the Ports of Los Angeles and Long Beach, looking at other areas within the region, and they were able to utilize matching funds from various other program participants. For instance, the Ports of Los Angeles and Long Beach had separate pots set aside from settlements that they were able to utilize, that money in conjunction with our money which served as both seed and catalyst. We found we can leverage up to fourfold.

There are other projects where we haven't been able to leverage as much and there are instances where we have only been able to leverage up to two-thirds. One of the key criteria we have always tried to establish is there has to be a level of matching funds. That demonstrates to us you have a broad stakeholder commitment. We think when you have that broader stakeholder commitment, you have a greater level of assurance of success. That is what we are looking for.

Senator VOINOVICH. You might say this is the yeast that raises the dough?

Mr. NASTRI. It could be said, certainly.

Senator VOINOVICH. Senator Jeffords.

Senator JEFFORDS. You said there are 11 million engines in today's fleet and a substantial number of these engines are going to continue operating for the next 20 to 30 years. Given the huge health cost associated with these long-term sources of pollution, it would appear to make much more sense not to rely on an entirely voluntary system of reductions. Instead, we could give the EPA and the States clear authority and direction to control emissions from existing engines now rather than waiting for decades until the cleaner ones penetrate the fleet.

What are your thoughts about that?

Mr. NASTRI. My thoughts are we have the authority to address the new engines. The question then becomes how do you regulate the in use engines. I think we actually do have authority to regulate in use engines at the time of repower or rebuild. The trouble

with that though is oftentimes those are done at much different levels and it would become very difficult to actually enforce that type of action. What happens with vehicles, and I am sure others will be able to explain this better, but oftentimes fleets will simply sell their existing vehicles to someone else and acquire new vehicles. Those new vehicles will be run an additional 200,000 to 300,000 miles before they are rebuilt.

The level of resources available to do the repowers and rebuilds fall to those less able to do that. From an enforcement and compliance perspective, it would be very difficult for us to move forward. That is why we focused on the voluntary program where we can say to the smaller business owner-operators who may have one or two trucks operating, for instance in southern California where there are incentives that will make it more worthwhile for them to do the retrofit. If we had to regulate that and make them do it, a number of them would say we simply can't afford it. From our perspective, the voluntary program provides much more incentive and much more means to do that.

Senator JEFFORDS. That is very helpful testimony.

How will EPA address diesel exhaust in the soon to be proposed $PM_{2.5}$ implementation regulations?

Mr. NASTRI. I am sorry, I don't know the answer to that. I can certainly make sure we provide you with the information.

Senator JEFFORDS. When the Mexican trucks enter the United States right now, how is EPA making sure these trucks comply with the same Federal emission performance standards that trucks registered in the United States have to meet?

Mr. NASTRI. I will speak to what is going on in California and Arizona and we can provide further information from the broader region, particularly with regards to Texas.

Right now, we are working very closely with the California Air Resources Board to develop means that would actually test those vehicles as they enter the United States. We are looking at performing emissions testing along the border trying to establish the inventory of those vehicles, looking at what vehicles would be capable of utilizing newer technologies or some of the newer fuels issues to reduce those emissions. At this point, I would say we are working closely with the State to identify both the inventory and the means we think will work. Once we have that defined, then I think we can come forward with a program, both at the State and local level in conjunction with support at the national level.

Senator JEFFORDS. That is very helpful.

You stated the Administration cannot support the authorization levels in this bill because they might create pressure to actually appropriate more money for diesel retrofits in the future. The benefits to cost ratio in that case may be as high as 13 to 1. Where else would the Administration rather spend the $1 billion authorized in this bill?

Mr. NASTRI. As Regional Administrator, I could think of several places in the region I would like to spend that money but from the national perspective, I think that is probably best answered by the Administrator.

Senator JEFFORDS. Thank you. I guess that is an answer.

Senator VOINOVICH. Senator Clinton.

Senator CLINTON. Thank you, Mr. Chairman.

Mr. Nastri, I am somewhat confused by the Administration's position which as I understand you are representing today. The Diesel Emissions Reduction Act establishes voluntary national, State and local level grant and loan programs. This Act does not force anybody to do anything. It increases the resources available to incentivize people to move as quickly as possible to retrofitting diesel engines.

I think the analysis of this legislation, which the chairman has very eloquently stated, the cost benefit is rather extraordinary. There are few pieces of legislation that have any chance of passing the Congress that have this kind of return for the dollars invested.

I think it would be very helpful if the EPA and the Administration took another look at this because your own testimony says, "There are endless prospects across the Nation to reduce diesel exhaust." The problem is we haven't invested the kind of dollars we need in order to put this on a fast track. I hope the Administration will take another look at this and support this legislation.

It would certainly be a total environmental win and I believe a total economic win for the Administration and for the Congress. It would send a very strong message to the country about the seriousness with which we are dealing when it comes to diesel exhaust.

I wanted to ask you on a slightly different note if you could enlighten the committee as to why the EPA has delayed the ultra-low sulfur diesel fuel rule?

Mr. NASTRI. I believe you are referring to the delivery of the fuel, correct, the distribution system, the 45-day extension recently granted?

Senator CLINTON. Yes.

Mr. NASTRI. The manufacturers still have to meet the requirements for the ultra-low sulfur fuel. The issue is one of distribution, so for the distribution channels to be cleared because what happens is through the pipelines you can have residue sulfur content. The residue sulfur content can contaminate the ultra-low sulfur fuel, so there are issues that have to be addressed before that is fully implemented.

We did not take the extension lightly. It is something we took very seriously and we don't believe there would be any cause for another extension but is something that is certainly understandable. These are issues I have certainly seen at the local level in the regions among pipeline transfer issues fairly routinely.

Senator CLINTON. But it is your testimony that you don't believe another extension will be necessary beyond the 45 days?

Mr. NASTRI. That is correct.

Senator CLINTON. Thank you, Mr. Chairman.

Senator VOINOVICH. Thank you.

Senator Carper.

Senator CARPER. First, just a short comment.

This past week during our recess, like most of my colleagues, I sought to cover my State which is something I always enjoy doing, getting to see a lot of people and reconnecting with the folks from one end of Delaware to the other. Among the other things we did was my family and I took off 3 days and we went to visit a number

of schools with our oldest son who will be a senior in high school this year.

Coming back from Connecticut and Massachusetts heading back to Delaware, coming onto I–95 through New York City approaching the George Washington Bridge, very slowly, in fact we approached it for hours.

[Laughter.]

Senator CARPER. Until we finally got there. My wife pointed out on either side of the highway, the folks who live alongside I–95 which cuts right through New York City. She said, looking at all the trucks around us, the diesel trucks, the huge trucks and other vehicles literally lined up bumper to bumper for miles and she said, "God, it would be awful to have to live here and put up with all that noise." I happened to look out our window and there were a bunch of kids playing on a playground, not 100 yards from where we were and I said, it is not the noise that would be hard to put up with, it is what these kids are breathing.

I understand the Administration has concerns with the cost of this program which Senator Clinton suggests the cost benefits actually are quite good compared to other programs but sometimes we lose sight of the cost of the health impairment for those kids that we saw. It is not just the ones as we approached the George Washington Bridge, but kids or families living on either side of I–95 or other busy traffic roads in my own State or in Ohio, Vermont or any other State.

I would just ask that as the Administration looks at an initiative like this, which you know enjoys strong bipartisan support, that there are benefits that also can be measured and that have a very positive effect not just on the bottom line in terms of health care costs, but in the quality of life of those kids.

I guess I don't have a question but I would ask you to keep that thought in mind as the Administration formulates its own views as this legislation moves forward.

Senator VOINOVICH. Thank you, Senator Carper.

You always get to the jugular of an issue. One of my real concerns, and we have a study being paid for by the Environmental Protection Agency in Cincinnati at the University of Cincinnati Hospital, where they are actually measuring the impact of particulate matter emissions from diesel on children. The study has a long way to go, but they have looked at kids from birth to 6 months and then they will look at a year and start to do some examinations of those children, to see what impact this is having on their health and maybe their development.

What really causes me some concern is the initial studies show their being that close to the highways is really having an impact on them. Then I think of all the developments that have been done in this country and I don't know if it is the case where you live, but in the midwest, if you drive around, go out of town on one of the interstates, you will find all kinds of development, condominiums being built right up next to the freeway. They have these sound barriers there but the fact is they are close enough for all these emissions that come up 24 hours a day, they go up, over and drop down. Particulate matter I understand is up there and it comes down.

I am thinking about all the people in this country right now being subjected to all this and some of them may not even know it. I think not only should we be concerned about this in terms of ambient air standards, but I think some of our developers around the country ought to be interested in moving pretty quickly on doing something about this issue.

I mentioned this when the amendment was debated on the floor just before it was adopted, I think by 92 to 1 margin, the great thing about diesel engines, the ones on the highways these days, they last a long time. The bad news about diesel engines, the ones on the highway right now is they last a long time. If there is a relatively inexpensive way to make sure those diesel engines are putting out less nitrogen oxide and less particulate, I think we ought to think long and hard before we let this opportunity pass us by.

Thank you.

Senator VOINOVICH. Thank you.

Mr. Nastri, I really enjoyed your testimony and your written testimony. Thank you very much. I hope all of our Regional Administrators are as effective as you are. Thank you for coming.

Mr. NASTRI. Thank you, Mr. Chairman. I will certainly convey your sentiments and thoughts to our Administrator. I can assure you that the people in the regions are doing the same as well.

Senator VOINOVICH. Our second panel is: Margaret Keliher, county judge, Dallas, TX and up in my neck of the woods, we call them county commissioners. Then we have Joe Koncelik, Director, Ohio Environmental Protection Agency. Joe, it is nice to see you again. It seems in the last couple of months we have spent a lot of time together.

Mr. KONCELIK. It seems that way, Senator.

Senator VOINOVICH. Judge Keliher, we would like to begin with you.

STATEMENT OF MARGARET KELIHER, COUNTY JUDGE, DALLAS, TX

Judge KELIHER. I am the Dallas county judge. I am the presiding officer for Dallas County's Commissioner Court. I am also on the board of the Texas Environmental Research Consortium. I am a member of the North Texas Clean Air Steering Committee, a member of the Texas Clean Air Working Group and a member of the Regional Transportation Council's Committee for Clean Air.

In light of all that, I am very proud and pleased to be here to support Senate bill 1265. Mr. Chairman, I also want to applaud you on your leadership for this very important legislation.

Right now, the DFW area is not in attainment. We are a nonattainment area. Right now, we do not know what we are going to do to be able to clean up our air by the year 2010. We do know we need some help and we do know we are very pleased with this legislation.

Also, as Dallas county judge, however, I am responsible for health care in Dallas County. Now in Dallas County, the busiest emergency room for children happens to be the Children's Hospital. The No. 1 problem in our hospital is respiratory problems for children. So this is an extremely important bill for all us, not only for

environmental issues but as you all have been pointing out, also for health care reasons.

As I will demonstrate in my testimony, Texas has worked already aggressively in trying to reduce emissions from diesel engines and from the non-road sector by passing and funding the Texas Emission Reduction Plan which I will refer to as TERP. Texas has taken the lead and demonstrated the effectiveness of an incentive-based plan to help reduce emissions such as Senate bill 1265 would do. Now, however, it is time for the Federal Government to step up and help assist us in these programs.

We are, therefore, asking for some help to do some emission reductions from sectors such as the railroad sector. In 2001, the Texas Legislature established the TERP Program. In authorizing the bill, the TERP was intended to be used as a tool, "to assure that the air in the State is safe to breathe and meet minimum Federal standards and to develop multi-pollutant approaches to solving the State's environmental problems."

We have extended through the Texas Legislature the TERP Program and its funding through the year 2010. The heart of the TERP Program is the Emission Reduction Incentive Grants Program which currently funds projects in 41 counties where the air quality violates or is close to violating the EPA standards. The principal goal of this grant program is to reduce NOx emissions with an implicit goal of reducing a combined 49 tons per day of NOx in the Houston, Dallas and Ft. Worth area. This program is currently funded to the tune of about $120 million to $140 million annually.

As of June 8, 2005, approximately $192 million in TERP grant funding had been awarded to 732 projects. Over their lifetime, these projects are expected to reduce the NOx emissions by nearly 41,000 tons at a cost of approximately $4,700 per ton which as you have already pointed out, is one of the best uses of taxpayer dollars we could have. That does not take into account any of the health care costs.

Our projects have ranged in size from being a few thousand dollars for replacement of a single piece of construction equipment, to over $11 million to retrofit and refueling some of the large fleet of transit buses.

However, during the last legislative session in Texas, which I might add is kind of still going on, some of our legislators questioned the fairness of the funding structure of the TERP Program. Fifty million dollars per year of TERP funding comes from fees on diesel equipment that is sold or leased in Texas, yet some of the largest and most cost-effective grants have gone to reduce emissions from railroads who pay noting into the TERP system.

Senate bill 1265 could help and assist Texas in providing funds to reduce the railroad engine emissions, while leaving State funds available to address reductions from the construction industry that participates in the funding of the TERP Program.

Dallas and the DFW area's ozone pollution problem is different from that of Houston. Houston's is primarily industry. The DFW area, however, is primarily on-road/off-road mobile sources, the so-called federally preempted sources largely out of reach of State and local regulations. The Texas Commission on Environmental Quality

estimates that in 2010 after the implementation of our already existing control measures, non-road and off-road mobile sources will constitute 32 and 38 percent respectively of our NOx emissions. There is a chart I put in my testimony that shows this 32 and 38 percent which combined means that 70 percent of our region's pollution is coming from federally preempted sources.

This emissions break, needless to say, is especially staggering in light of the estimated pollution costs that may have to be made in order to comply with the 8-hour standard. Less than 2 weeks ago, the TCEQ informed us at our North Texas Steering Committee that we are going to have to reduce our NOx emissions in excess of 45 percent for us to be able to meet the clean air 8-hour standard by the year 2010. At this time, we are unsure how we are going to meet that standard. We need some help and we need some help from the Federal Government.

While the TERP Program has been an effective tool in this regard, State funding has just not been enough to meet the lofty emission reductions that are being forecast by the TCEQ. Federal funds from this Act are needed to help us clean up some of the larger engines such as railroads for the DFW area to meet these clean air standards.

The Texas Legislature just also added to TERP a program to help reduce emissions of diesel exhaust from school buses which as we know, may be some of the dirtiest air children breathe all day long. This Act could also, if implemented, complement the source of funding to enable programs such as the recently created Clean School Bus Program.

We have had many successes from our TERP Program but one key lesson of the TERP is that meaningful financial incentives will lead private and public fleet owners to find ways to clean up their vehicles. In the case of the TERP, it is has certainly been true that if you build it, they will come.

Senator VOINOVICH. Judge, could you wrap up your testimony?

Judge KELIHER. Yes.

Another result of these financial incentives has been the development of the new emission control technologies which we have benefitted from. Let me wrap this up by saying I also want to complement the funding structure. I appreciate the 20 percent of the funds being allowed to go to the State, especially those who already have programs and allow them to use those dollars where there are already set programs and also 10 percent to be able to be matched from the States. I truly believe in match programs.

I think as you have noted this is the best thing we could do with taxpayer dollars and I strongly support Senate bill 1265.

Senator VOINOVICH. Thank you very much, Judge. I hope you make sure your two Senators understand that too.

Judge KELIHER. I did with one of them this morning, so thank you.

Senator VOINOVICH. Maybe you can work on your former Governor too.

[Laughter.]

Senator VOINOVICH. Mr. Koncelik.

STATEMENT OF JOSEPH P. KONCELIK, DIRECTOR, OHIO ENVIRONMENTAL PROTECTION AGENCY

Mr. KONCELIK. I am Joe Koncelik, Director of the Ohio Environmental Protection Agency. Thank you for allowing me to address this important legislation to help improve our air quality by reducing emissions from existing diesel engines. As the focus of the discussion has been today, this a critical piece of this legislation which helps States address existing diesel engines.

The legislation is significant for two reasons. First, it is going to help States meet the new Federal deadlines for ozone and fine particle standards. It does by addressing those sources of emissions. The States just do not have the tools to address existing diesel engines. As my counterpart from Texas discussed, a lot of these sources are either federally preempted by standards that apply to them, it is very difficult for the States to develop independent State regulations that will reduce emissions from existing diesel sources.

We need reductions from these sources in order to meet the new Federal standards. These new Federal standards present a significant challenge to areas of Ohio, particularly the Senator's hometown, Cleveland, OH and many other areas around the country such as Atlanta, GA, New York, Milwaukee, Philadelphia which will have a tremendously difficult time meeting the new Federal standard for ozone and fine particles.

In Ohio, we have 33 non-attainment counties for ozone and another 27 non-attainment counties that don't meet the fine particle standard. The non-attainment is in part due to diesel engine emissions, so we need to reduce emissions from those sources in order for us to help meet these Federal air quality standards.

Are there Federal programs that help address emissions? Yes. As discussed this morning, there are U.S. EPA new diesel engine rules and a fuels program that will help reduce diesel emissions by 80 percent by the year 2030. That is the key date, 25 years from now. The reason it takes so long is because those rules are addressing new engines as they come onto the road and they rely on turnover of the existing fleet in order to get their reductions.

The simple fact is the States need much faster reductions than those provided by the Federal Government under their current rules. The latest deadline the State of Ohio has to meet the ozone or the fine particle standard is 2010 not 2030. So we have to meet the standards 20 years sooner than the relief that will be provided by the Federal program. Somehow we have to develop ways to address the 11 million existing diesel engines on the road in order to get reductions to help us meet that challenge. I think this bill helps close that critical gap.

One of the reasons it is harder for States to address diesel engines is these are sources of pollution that don't remain fixed in one location, similar to industrial sources. Industrial sources, States can develop individual permit requirements or regulations to get reductions from those sources. Diesel engines on trucks and construction equipment not only move around within a State's borders but they cross those borders.

In some cases, States are prevented by the commerce clause from developing independent regulations that would get reductions from those sources. We need some kind of national program such as that

provided by this legislation that allows the flexibility of a national retrofit program. That is the only logical answer to get the reductions we will need from this category of sources.

I am also pleased that 20 percent of the money will be sent to the States to help build programs. Like many other States, we have a school bus diesel program that will help leverage that money and we will be able to get to more school districts in Ohio.

I do want to mention the other point of this legislation which is helpful. The tremendous economic impact cannot be over stated that the new Federal standards are going to have on States and the difficulty those States will have meeting these Federal standards. It is estimated in Ohio that billions of dollars in new costs for industry and consumer controls are going to be necessary to meet those standards.

In some cases the ozone and fine particulate standards are simply unrealistic. I think that is what my counterpart from Texas has discovered and we have discovered in Ohio. For an area like Cleveland, you cannot meet the standard by 2010. There is no localized reduction program we can develop that will help us meet the standard by that deadline.

We need regional programs, national programs that will get us the reductions we need. We need innovative approaches and this is one of those approaches that will help us achieve those reductions, and reduce the economic burden that the States are facing in compliance costs to meet these Federal deadlines.

I want to commend Senator Voinovich and Senator Carper along with the cosponsors for this bipartisan effort to clean up our air and improve public health. We strongly support this legislative initiative.

Senator VOINOVICH. Thank you very much.

Judge one of the things that you brought to our attention is the pollution you are getting from railroads and finding ways to pay their fair share as part of the program. Do you think that there is enough flexibility in this legislation that would allow the EPA to look at that. Thirty percent of this is the States and 70 percent is CPA but do you think the language we have in the legislation is adequate in the event that you suggested that to the EPA, that the money could be spent to help with that problem?

Judge KELIHER. I would have to look back at the language to see if that portion of it would but if not, we could certainly use it as part of the 30 percent that is provided to the States.

Senator VOINOVICH. What are some of the lessons that other States could learn from putting your program in place? One of the things I think once this goes into effect, as you know the 20 percent will be divided among all of the 50 States. Many of them may not take advantage of it and some will but how difficult was it for you to put this program in place? You said you started in 2001?

Judge KELIHER. Right. Needless to say, dollars are always tight, so I will tell you we have been at the legislature continuing to fight for the dollars to be allocated to these programs. However, as you pointed out, it has been so cost-effective, it has been one of the most cost-effective things we have been able to do to help clean up the air, so as the program has gone on and I think Texas could certainly be looked at as a pilot for this program, as the program has

gone on and shown how effective it can be, it has been well worth the taxpayer dollars.

In response to your question of what can we learn, one of the things if you had it to do over is a little better outreach to some industries to get them to participate in the programs. However, with the funding we have now, we have not been lacking participants for the programs.

Senator VOINOVICH. In other words, there is X percent of the dollars for the programs made available to industrial polluters. They can make application for those funds?

Judge KELIHER. Actually, most has been construction and what we have been doing with our grants programs. If they make application, we evaluate them based on certain points. Based on that, they get the grant dollars.

Senator VOINOVICH. What kind of cost benefit ratio do you have? Mr. Nastri, set examples of four to one. Say I am a business, I come in and I take advantage of the program, how much money do they have to put into the program?

Judge KELIHER. There are different measures and I don't know the exact answer to that because there are different scales depending on what kind of entity they are, if you are a lower income compared to another industry. I don't quite know the answer to that but I could find out and give you some of the specifics of the particular program in Texas.

Senator VOINOVICH. I would like that very much but the bottom line is even though it may not be that much, you have enough people who want to go in the program that you don't have enough money to satisfy that?

Judge KELIHER. We have turned down people every time we have gone out with a call for projects. We have had to turn down people who have submitted a request.

Senator VOINOVICH. I would really be interested in seeing what the leverage is in terms of the private sector.

Judge KELIHER. I will do that and also give you kind of how they scale them and what the evaluation process is.

Senator VOINOVICH. When I was Governor of Ohio, we had this 50/50 where you encouraged the private sector to reduce their seven most toxic emissions. The purpose was to get the top 100 emitters to come into the program. They voluntarily came into it and they were given flexibility. It wasn't command and control, it was we would just like you to come into the program. I was amazed, almost all of them came in and then we got others not on that top list of 100 that said, "Yes, we want to participate." Each year we would honor and recognize those doing the best job.

There is a sense in this committee for some reason that a lot of private sector people really aren't interested in cleaning up their emissions. My experience has been just the opposite of that. I have a lot of faith in the private sector. There are some bad people out there, sure, but the overwhelming people I come in contact with are good citizens. Would you care to comment on that?

Judge KELIHER. We have had extreme success with our TERP Program. We have not been, I will tell you, as successful with the program of letting individuals bring in their car. We have a program where we have dollars for that. I think a lot of that has been

lack of knowledge of the program and our poor advertising of the program.

In looking at how these dollars will be spent, we will have to look at some of the dollars for administrative costs and advertising for these programs, whereas on the TERP Program where it is much more business and fleet oriented, we have not had any problem at all having companies take advantage of this program.

Senator VOINOVICH. Do you have a voluntary emissions program or is it mandatory for automobiles?

Judge KELIHER. It is mandatory.

Senator VOINOVICH. Pipe testing?

Judge KELIHER. It is mandatory in the non-attainment portions of the State.

Senator VOINOVICH. We have the same thing in Ohio. In fact, the Legislature just passed legislation that in order to get their license plates, they have to do an emissions check. I think Mr. Koncelik, they are going to pay for it, the State is going to pay for it because people resist it. The problem I think is so many don't understand that is one of the most reasonable ways as part of your State implementation plan that you can help reduce emissions.

Judge KELIHER. I do have to tell you we have a program right now that we have started where they tell us approximately 10 percent of the vehicles are causing 80 percent of the problem, so your natural reaction is go get those 10 percent of the vehicles. We started a program of trying to find those 10 percent of the vehicles and are doing a pretty good job. Some of that is becoming a bit more mandatory to make them get their cars tested.

Senator VOINOVICH. Senator Carper.

Senator CARPER. Mr. Koncelik, how long have you been in your current post?

Mr. KONCELIK. I have been the director since January but prior to that, I was the assistant director for the last 6 years.

Senator CARPER. How long in your current position?

Mr. KONCELIK. As Director of Ohio EPA, I have been in that since January so 6 months.

Senator CARPER. How long have you lived in Ohio?

Mr. KONCELIK. All my life.

Senator CARPER. Where did you go to school?

Mr. KONCELIK. Ohio State, a good Buckeye.

Senator VOINOVICH. The only two Buckeye graduates in the Senate.

Senator CARPER. In the time you have lived in Ohio, who do you see that stands out as a great Governor.

[Laughter.]

Mr. KONCELIK. That is a tough question. I would of course have to say Senator Voinovich really comes to mind, but of course, my current boss, Governor Taft, is a fine Governor.

Senator CARPER. We thank you for sharing him with all of us.

I want to come back to you, Judge. I think that is so neat. We have a levy court in central Delaware for members who lead county government but our levy court members are called commissioners. We have in other parts of our State, county councils, so we call them councilmen and councilwomen but the idea of calling the folks who do that judge, they would love that.

Judge KELIHER. In the State of Texas, because of the Texas Constitution, instead of county government, they are all set up exactly the same, so in some of the counties, the county judge actually tries cases, so they are actually a judge which is not true in Texas. However, you do not have to have any kind of legal requirements to be county judge, so you have judges with no legal experience who are hearing cases. I used to be a real judge though before I took this fake judge position.

Senator CARPER. Can real judges in your State marry people?

Judge KELIHER. Yes.

Senator CARPER. Can county judges marry people?

Judge KELIHER. I can marry people, pronounce dead or have you committed.

[Laughter.]

Senator CARPER. In that order?

Judge KELIHER. Is there a difference?

Senator CARPER. In our State, the Governors nominate with the advice and consent of the Senate people who serve as judges. All of our judges in Delaware can marry people. Our magistrates, who we call justices of the peace, can marry people. The Mayor of Wilmington can marry people. When I was elected Governor, I thought since the people I was appointing could marry people, I thought I could marry them as well. My first year as Governor, I married about 40 couples and then found out I couldn't do that.

[Laughter.]

Senator CARPER. And we never told any of them.

[Laughter.]

Senator CARPER. Some of them are going through life blissfully happy and some of them are miserable. How can I get out of this, and they are not even married?

[Laughter.]

Senator CARPER. I might be stretching that a bit.

A serious question I want to ask goes back to trains and reducing emissions from diesel powered locomotives. Here in the northeast corridor, if we run a train carrying freight from Washington, DC up to Boston, MA, for every 1 ton of freight that we move from here to Boston, MA it uses about 1 gallon of diesel fuel. Think about that. Move 1 ton of freight by rail from Washington, DC to Boston, MA, we can do it for 1 gallon of diesel fuel, which is pretty impressive. That says very good things about the potential for reducing our reliance on foreign oil, especially as we think of the prospect of mixing soy bean oil with our diesel fuel and helping a bit on the emissions side and also reducing our reliance on imported oil.

I want to come back to the issue of emissions from those diesel powered locomotives. You talked a bit about that. I visited with one of your railroads, Burlington Northern in Santa Fe, which is headquartered in your State I think in Ft. Worth, and spent some time with them. Just talk to us a little bit more about the emissions problem you are experiencing in Texas because we have it in other places too, certainly in my own State, that relates to diesel powered locomotives particularly on the freight side.

Judge KELIHER. I serve on an advisory committee called TERP which actually does a lot of the research for where our emission problems are. In going through the studies, it became apparent

that a lot of the emissions we actually had were coming from the locomotives. I have to tell you that was somewhat of a surprise to me because I don't think of us as having that many locomotives to tell you the truth, so it was surprising to me to see the numbers that came up.

That is why even with the TERP Program, even though we cannot get the locomotives to help fund the TERP Program, we have found that to be the most cost-effective use of our dollars, to be able to use those to help with the locomotive emissions.

Senator CARPER. Mr. Koncelik, anything you would like to add to that on the railroad side, particularly the freight side? Keep in mind, when AMTRAK runs out of the northeast corridor between Boston and New York, they are using electricity but when they are out of the corridor, they are operating on the freight railroad tracks, including Burlington Northern and Santa Fe and they use diesel powered locomotives. Any thoughts with respect to diesel powered locomotives and what we can or ought to be doing and how this particular proposal might affect and improve their emissions level?

Mr. KONCELIK. I think the fact there is flexibility built into this legislation, I am always an advocate for giving the authority to the States to be able to use that money wherever it can be most effective because each States' issues may vary. We may have a bigger diesel truck, construction equipment problem than a locomotive problem where another State may have a locomotive problem. The nice aspect about this legislation is the 20 percent that can go to the States, the States can then say let us target what our biggest issue is and let us tailor it to our biggest issue.

Senator CARPER. Those are my questions. Thanks to both of you.

Senator VOINOVICH. I would like to make a couple other comments. Mr. Koncelik, I would like to underscore something you testified to.

First of all, I would like to say you have been very effective because Kay Bailey Hutchinson is an original sponsor of this legislation.

Judge KELIHER. Yes, thank you.

Senator VOINOVICH. See if you can get John Cornyn to do the same.

Judge KELIHER. I am going to. Thank you.

Senator VOINOVICH. Good.

I would like to remind us all that the American Association of Railroads has endorsed this legislation which is good. Maybe we can take advantage of it.

Mr. Koncelik, you state that this bill has economic benefits in addition to the air quality and public health benefits. This is a very important point that I think many of my colleagues don't understand. That is that the new air quality standards are going to have a major negative effect on the economy of our Nation and States.

Could you elaborate because Senator Carper and I tried to negotiate the Clear Skies legislation for some time and hopefully we might still be able to do that here but the fact is I got the impression that Clear Skies was going to take care of the problem. I was absolutely shocked, Senator Carper, when I sat down with Mr. Koncelik and he told me, listen you can pass this legislation and

this business about us coming into compliance is nonsense. I would like you to comment on that a bit and how you think this legislation might help you in putting together the State implementation plan.

Mr. KONCELIK. I would be happy to, Senator.

First, to be absolutely clear, we are a strong supporter of Clear Skies as the Senator knows. The issue we discussed was the emission reductions from power plants that will help the States. It was the legislation at the end that talked about amending the Clean Air Act and allowing States more flexibility as far as the time they have to comply with the new standards, the transitional language attached to that piece of legislation.

That is the piece that makes it critically important to the States like Ohio. There are so many other areas and you can look at the major metropolitan areas, any area designated moderate, non-attainment for ozone, that is Philadelphia, New York, Cleveland, Chicago, Atlanta. U.S. EPA did a very effective job of modeling on a national level the benefit of programs like Clear Skies or CAIR or these new diesel standards. U.S. EPA did not take a more localized look and take an area like Cleveland or Philadelphia and say, what would it take for that area to be able to attain these standards.

The States have now done that work and that is the work that has led to such a huge level of concern on our part and some of our other States in similar situations. For instance, in Cleveland, we cannot develop a plan to reduce emissions in the Cleveland area to meet the 2010 deadline it faces under the ozone standard.

In fact, we did an emission run where we zeroed out all emissions from industrial sources in Cleveland, almost depopulating, a hypothetical, depopulate, shut down all industry, we still wouldn't reach the 2010 deadline. That highlights the dramatic nature of how those deadlines are only going to be met through Federal programs such as Clear Skies, such as Federal diesel rule.

Not to go too long on this, but a good example of it is the one I talked about in our testimony, the Federal new diesel engine rule is a substantial tool to reduce emissions but in their cost benefit analysis, they decided on a full implementation date of 2030. The States are facing a deadline of 2010, that is 20 years earlier. That diesel emission rule is not going to substantially help the States meet the deadlines.

So the States are feeling squeezed right now because many of these Federal programs, CAIR has as a 2015 deadline, the diesel program has a 2030 deadline, the other clean fuels programs have deadlines in the 2020 to 2030 range. Those are too long. The States have a 2010 deadline.

What I have said is there seems to be a lack of a coherent strategy right now at the Federal level with the tools and the reduction programs they have for utilities and power plants, cars and vehicles are all on much longer schedules than the deadlines they are holding the States to.

As the Senator knows, we have been very active in pointing out this needs to change. We need to have some way of addressing this to give more flexibility to the States. Options are Clear Skies with its transitional language helps us, also Representative Barton's language in the Energy bill helps States in that situation and this

legislation helps because it gets at emissions that the States otherwise can't get to.

Senator VOINOVICH. Thank you very much.

Senator Carper.

Senator CARPER. Just a comment or two in closing before our next panel.

I don't have a perfect recollection of the language favored by Congressman Barton in this regard, but just remember there are always downwind States and to the extent the States who are upwind, States or localities are going to give you a little more time to comply, for the folks downwind on the receiving end of the emissions from those particular communities given extensions, there is a question about how fair is it to those downwind States who have been making the tough decisions, doing everything they can to come into compliance.

Second, my understanding is the folks in Ohio, particularly your Agency and the people who work with and for you have been very much involved in the formulation of this legislation that Senator Voinovich and I have introduced. If that is a correct understanding, I just want to send a special thank you to you and your team.

The last point I would make deals with the level of emissions of nitrogen oxide and ozone that come from utility plants as compared to those which come from cars, trucks and vans that we drive. My understanding is the level of emissions that come from cars, trucks and vans is roughly twice the magnitude of that which comes from our utility plants.

To the extent we are going to make progress near term, while we wrestle with this other legislation Senator Voinovich and I have been trying to broker a compromise or a consensus. In the near term one of the best things we can do with nitrogen oxide, hopefully we all will agree, including the Administration, the best thing we could do for all those millions of diesel powered vehicles that are going to be on the road for a long time, to the extent we can get them some help, whether buses, school buses, trucks, locomotives, we will all be better for it.

Thank you for your help on this and Judge, great to see you.

Judge KELIHER. Thank you very much.

Senator VOINOVICH. Thank you for being here.

Our third panel consists of: Michael Cross, vice president, Cummins Inc., and general manager, Fleetguard Emissions Solutions; Conrad Schneider, advocacy director, Clean Air Task Force; Timothy J. Regan, president, Emissions Control Technology Association; and Stuart Nemser, founder, chairman, Compact Membrane Systems, Inc.

We are happy to have you here. Mr. Marmino, my staff person on this I think has spent some time with each of you to try and cover various sections of this legislation so we see each facet of it. Mr. Cross, we will start with you. Thank you for being here.

STATEMENT OF MICHAEL CROSS, VICE PRESIDENT, CUMMINS INC., GENERAL MANAGER, FLEETGUARD EMISSIONS SOLUTIONS

Mr. CROSS. Thank you for having me.

I have a full statement I would like to submit for the record.

Senator VOINOVICH. I want all witnesses to know your full statement will be made a part of the record.

Mr. CROSS. Good afternoon, I am Mike Cross, vice president of Cummins Inc., also general manager of Fleetguard Emissions Solutions, a subsidiary of Cummins.

I am honored to testify here today in strong support of the Diesel Emissions Reduction Act of 2005. I would like to focus on four main points today. First, new diesels are getting cleaner and the Diesel Emissions Reduction Act will help reduce emissions from the existing diesel population. Second, retrofits with after treatment devices and engine replacements can cost effectively clean up these in-service diesels and provide immediate benefits to the environment.

Third, the bill will support State and community efforts to achieve the new National Ambient Air Quality Standards. Fourth, ultra-low sulfur diesel fuel is essential to realizing the full benefit of the Diesel Emissions Reduction Act and to achieving enormous reductions from new diesel powered vehicles.

Cummins and the rest of the diesel industry have been making huge strides in emissions performance. In 2001, EPA issued and the Bush administration approved a rule to make on-road diesel vehicles even cleaner. On this chart, you can see three steps required by the new on-road rule which will lead to dramatic reduction of oxides of nitrogen, NOx and particulate matter from 1998 levels. The first step came in October 2002, the second step will come in 2007 and the third step in 2010.

To comply with the first step, Cummins was the first in our industry to introduce a complete line of EPA compliant engines. In 2007, using ultra-low sulfur diesel fuel and advanced technologies, PM emissions will decline by 90 percent and on average NOx will decline by more than 50 percent from 2004 levels. By 2010, both NOx and PM emissions will have declined by 90 percent from today's levels and our engines will be near zero emissions. New diesels are clearly getting cleaner and cleaner.

However, according to EPA the full benefits of these rules for new engines will not be realized until 2030 because of the durability of the 11 million engines already in service which will last for hundreds of thousands of miles over a lifetime of up to 30 years. The Diesel Emissions Reduction Act deals with the emissions from the engines currently in service by putting in place a mandate free and flexible system to help States and communities address the new, more stringent ambient air quality standards.

Through retrofits some of the technology that will be used on 2007 engines can be applied to older engines in order to significantly reduce emissions. The retrofits that can be funded through this Act involve replacing the muffler on existing vehicles with an advanced catalytic device or system that will significantly reduce emissions. As you can see on this display board, retrofits have been and can be applied to a broad range of applications such as school buses, transit buses, refuse haulers and regional and line haul trucks.

A key to enabling this new technology is ultra-low sulfur diesel fuel. There has been discussion that some parties would like to alter or delay the ultra-low sulfur diesel fuel standard. The White House and EPA have assured our industry that they are fully com-

mitted to going forward with the fuel standards and the regulations.

On behalf of our industry, Cummins requests that Congress make every effort to ensure these ultra-low sulfur diesel fuel standards are not compromised because new, high technology diesel emissions systems rely on ultra-low sulfur diesel fuel and any change in the 15 ppm standard would undo EPA's rules and severely hamper the effectiveness of the Diesel Emissions Reduction Act.

To summarize, Cummins strongly supports the Diesel Emissions Reduction Act. Retrofits and engine replacements are cost-effective approaches to dealing with the emissions from the 11 million diesel engines in service today and will complement the aggressive on-highway rules for new engines which will continue to be implemented through 2010.

Thank you, Mr. Chairman. I would be happy to answer any questions.

Senator VOINOVICH. Thank you, Mr. Cross.

Mr. Schneider.

STATEMENT OF CONRAD SCHNEIDER, ADVOCACY DIRECTOR, CLEAN AIR TASK FORCE

Mr. SCHNEIDER. Mr. Chairman, Senator Carper, good afternoon. My name is Conrad Schneider, advocacy director of the Clean Air Task Force. We are a national environmental advocacy organization dedicated to restoring clean air and healthy environments through scientific research, public education and legal advocacy.

We appreciate the opportunity to testify here in support of the Diesel Emissions Reduction Act of 2005 and in particular, Mr. Chairman, I want to commend you for the leadership you have shown in bringing the bill to this point and also to your staff. You convened a group of stakeholders, including industry, fleet owners, local, State and Federal Government officials and environmental organizations to hammer out the details of this legislation.

You worked to assemble a nearly unprecedented group of cosponsors including Senator Carper, Senator Inhofe, Senator Jeffords, Senator Clinton and Senator Isakson on this committee and others. In less than a week after the bill's introduction, you offered it as an amendment to the Senate Energy bill where it passed by a vote of 92 to 1.

Now you are continuing the full court press to see if the bill can be added to the Transportation bill presently in the Conference Committee. Let us keep this momentum going on this important bill because enactment and full funding of the bill will do so much good for air quality and for public health in this country.

So many air pollution issues are ones not so visual. Diesel is a very visual one, so I will use some charts. The U.S. EPA and the California Air Resources Board and the International Agency for Research on Cancer list diesel exhaust as a probable human carcinogen. It is one of the top air toxic risks that we face in this country. The good news is, as you have heard, there is something we can do about it.

The next slide is a map of the United States that displays the health risks due to diesel. We have heard a lot about EPA's new

engine rules that will be fully effective by 2030 for both highway and off-road vehicles. In their regulatory impact analysis, EPA estimated those regulations ultimately will save 20,000 lives in terms of reduced, premature deaths in 2030.

This is a map that shows you where the concentration of the current premature deaths as a result of diesel are. Not surprisingly they are where the greatest concentration of diesel vehicles and engines are today. This is really the key map that you should look at from a health risk perspective because the first question in any hearing is, why should we do this? This is why and both of you have spoken to the health issues.

The second issue related to health is attainment of the ambient air quality standards. This is a map that shows the areas in non-attainment for $PM_{2.5}$, the fine particles, to keep it simple because if we did ozone it would be 400 counties, this is 225 counties. As mentioned, the Clean Air Interstate Rule that was finalized by EPA and hopefully will be going forward, will help. That will disappear as a result of the Clean Air Interstate Rule but there are areas that will stay in non-attainment including many in Ohio as you heard.

The new engine rules deliver their ultimate punch a little too late to be able to help the States in this regard. This bill through diesel rebuilds, repowerings, replacement and so forth, provides funding that, will be a cost-effective strategy for States seeking other strategies to come into attainment. It may take more than just this but it will take at least this type of effort to be able to make it.

In this slide, the top line is the emission reduction curve that will come as a result of the new engine rules. With this bill, we are talking about accelerating and steepening that curve. As you can see, by 2010, there is only about a 10 percent reduction with the attainment dates at that time. We are talking about trying to put this issue on a steeper curve through aggressive retrofits that are funded so that by 2010, 2015, 2020 we will see a significant additional difference.

The punch line of this in terms of the health risk is that there are tens of thousands of additional lives that could be saved if we do this. The area in the middle of that graph represents hundreds of thousands of avoided asthma attacks, tens of thousands of emergency room visits and hospitalizations and avoided premature deaths as well. That is really what we are doing with this bill.

The Clean Air Task Force and our State affiliated groups are involved around the country including in Ohio at the Mid-Ohio Regional Planning Commission slogging through the day-to-day details of how you put together a State Implementation Plan. One of the obstacles that group has run into, and this has been replicated all over the country, is money, especially for cash-strapped cities and States for their fleets. We are talking about transit buses, waste haulers, and school buses. The private sector may need to carry their share but for the public sector, we are talking about an unfunded mandate. It is unlikely that those types of fleets will be fully retrofitted without a bill of this type.

Last, I want to show you two slides. They show the good news about what can be done. The first one shows a school bus, and you

may be able to see there is a researcher with a monitor standing near the tailpipe.

I wish I could show you the video of this because it shows the bus moving out from a curbside as the children are being unloaded. They are measuring the emissions as the bus goes by and you may have experienced the puff of black smoke that comes up as the bus accelerates from the curb. That graph shows the level of particulate matter being experienced right there. This is a conventional school bus running on conventional diesel fuel today.

When that same bus is retrofitted with a filter and run on the ultra-low sulfur diesel fuel that we have been discussing that will be available next year if we stay the course, look at the line. The particulates from that school bus have been virtually eliminated. That is the type of solution that the money in this bill can provide. It is cost-effective and it will save lives.

Thank you very much.

Senator VOINOVICH. Thank you, Mr. Schneider.

Mr. Regan.

STATEMENT OF TIMOTHY J. REGAN, PRESIDENT, EMISSIONS CONTROL TECHNOLOGY ASSOCIATION

Mr. REGAN. First of all, I want to thank you for taking leadership on an issue which frankly will have a profound effect on the economy and on clean air.

My name is Tim Regan. I represent the Emission Control Technology Association. I am also the senior vice president of Corning Inc. Our members have been on the cutting edge of emission control technology for mobile sources for over 35 years. We invented basically the core of the catalytic converter.

This particular device has had a profound effect on the economy. Since 1975, it has reduced about 1.5 billion tons of pollution from American air, to about 3 billion worldwide. So it has had a very significant, profound effect on clean air and we expect the same kind of results to come out of diesel emission control technologies we are developing today including retrofits. We expect a significant benefit.

We support your bill not just because of the benefits I have just described but also because it is good for health and it is also very good economics.

Before I get into that, let me explain a bit about our industry and our technology. We are called after treatment. We are called after treatment because we treat the exhaust after it is burned from the engine. We can take exhaust which has harmful substances likes nitrogen oxides and hydrocarbons and turn them into harmless substances like nitrogen, water and carbon dioxide.

With respect to diesel, we can also filter out the fine particulate matter which is today seen as the primary threat to human health which is very significant.

I have a couple devices here I want to share with you. The first is called a diesel oxidization catalyst. That device has the surface area of four football fields, pretty significant.

This device can very effectively neutralize the carbon monoxide and hydrocarbons that are in diesel exhausts. It can achieve very significant reductions on the order of 90 percent on carbon mon-

oxide, with respect to hydrocarbons we are talking about 60 to 90 percent; and somewhere on the order of 20 to 50 percent with respect to particulate matter. This device is very cost-effective. This particular device costs somewhere between $400 and $1,000 per device installed on a vehicle.

The second device I have is a diesel particulate filter. This focuses on the particulates emitted from a diesel exhaust. You don't see these in gasoline exhaust. You see these in diesel. This particular device can take out over 90 percent of the particulates. That is real important because as already indicated particulates are the primary health risk with respect to diesel exhaust.

This device, too, is very cost-effective. The cost, according to our members, of this particular device installed on a vehicle is somewhere on the order of $5,000 to $7,000 per device. In addition, these devices are very durable. They have been demonstrated to last about 450,000 miles on a vehicle.

To demonstrate vividly what this technology can do, I'd like to bring to your attention this beaker which contains all the soot that is produced by a transit bus that runs for a full day on the streets. This technology will remove almost all of this soot from the exhaust which I think demonstrates the significance of the technology.

With respect to your bill, obviously it has tremendous health benefits. I don't want to get into those because my colleagues have already done it.

EPA estimates the economic benefits of your bill at about $20 billion. But here is sort of an interesting statistic to get some sense for how significant this is. Fine particulate matter is the most significant threat to human health. It is so significant that it is about 22 times more harmful than carbon monoxide and is about 8 times more harmful than nitrogen oxides.

Any time you can do anything to reduce emissions or clean up emissions from diesel, you are having a significant effect on human health, something which obviously is the primary economic benefit associated with this bill.

There are economic benefits associated with your bill, its cost effectiveness.

We just did a study which took a look at the cost effectiveness of diesel retrofits relative to other technologies invested in by the States under the so-called CMAQ program. We estimated the cost of diesel retrofits at about $5,300 a ton of emission reduction and that is the highest point on the estimate compared to about $126,000 a ton for an alternative fuel vehicle like a bus. You can see that retrofits are about a 25 times improvement over alternative fuel buses in terms of cost. Retrofits are very, very cost-effective.

The other economic benefit associated with your bill is the return on the investment. With respect to your bill, I think EPA estimated there is a 1 to 13 cost benefit ratio. With respect to the diesel rule in 2007, it is 1 to 16. And, with respect to the Clean Diesel Initiative, it is 1 to 24.

Finally, the third economic benefit is the fact it generates investment. Our members plan to invest $1.8 billion in this technology; that is, to develop the technology, to manufacture the technology,

and to commercialize it. In the case of Corning, the company I work for, we will spend $350 million and generate about 300 new high paying jobs in manufacturing in Corning, NY. In addition, we are exporting this. We are exporting it to China.

Mr. Chairman, I think you have a great idea here. I think it has great, great benefits in terms of health care and great benefits in terms of economics. I commend you both for moving forward with it and taking a leadership position.

Thank you very much.

Senator VOINOVICH. Thank you, Mr. Regan.

Mr. Nemser, I understand you are from the great State of Delaware?

STATEMENT OF STUART NEMSER, FOUNDER/CHAIRMAN, COMPACT MEMBRANE SYSTEMS, INC.

Mr. NEMSER. The great State of Delaware.

Thank you very much for the opportunity to speak here today. I am Stuart Nemser, Founder and Chairman of Compact Membrane Systems. I am here to provide the committee with my company's view concerning S. 1265, the Diesel Emissions Reduction Act of 2005 and its potentially very positive impacts.

CMS is a spinoff of DuPont in Delaware. We currently employ 20 people. I believe the Diesel Emissions Reduction Act will be very helpful for companies like mine to commercialize our developing technologies. Under the emerging technology provision of S. 1265, the EPA could allocate 10 percent of funds towards the development and commercialization of emerging technologies. These funds are to be used to retrofit, repower or replace a diesel engine for a bus, truck, marine engine or locomotive. In addition, S. 1265 requires that the EPA establish a program to promote the use of these retrofit technologies.

We began working on our diesel technology because we realized the same need you realized, Senators, the need to reduce the pollution from existing fleets of diesel engines. EPA's new regulations will require new diesel engines to use low sulfur fuel and reduce emissions by 2007. This has focused the diesel engine companies more on developing new technologies to incorporate in new engines, not how to address the problem of pollution coming from older diesel engines.

Diesel engines last a long time, as many have said, upwards of 30 years. In order to reduce air pollution emissions existing diesel engines need to be retrofitted with after treatment pollution control devices to achieve sufficient reductions, thus the purpose of your bill and our business opportunity. Retrofitting will be a most cost-effective way and pay for itself in a relatively short period of time.

CMS diesel membrane systems reduce NOx emissions, one of the most difficult diesel emissions to contend with by about 50 percent with no need to introduce and widely distribute hazardous chemicals throughout our country. We plan to have completed field demonstrations on a locomotive and a ferry in the next 18 months. If funds are available, we would then apply to have the EPA or CARB address and certify each platform. That may direct the question you asked about locomotives, Senator Carper.

Air Liquide/MEDAL, the largest industrial gas company in the world, actively supports this CMS program and encourages the passage of S. 1265. They have a written letter expressing their support of S. 1265 which I ask, Mr. Chairman, be submitted to the record.

[The referenced document can be found on page 87.]

Mr. NEMSER. Air Liquide/MEDAL is likely to be the supplier of the commercial membrane modules for this program.

The development of new technologies is critical to the long term goal of developing the most cost-effective measures for reducing harmful emissions. Without the funding S. 1265 would provide, emerging technologies from companies like ours will continue to struggle to fully develop into functional prototypes ready for commercial application.

Related to our aging diesel fleet with only a limited number of prototypes seeking production, key decision makers will be more inclined to delay implementation of emissions reduction technology or favor technologies that are already certified and therefore have lower initial costs but may have significantly higher long term costs. If this is allowed, this latter approach permits continued pollution and ensuing health problems.

At CMS we feel we are on the cusp of full commercialization. Unfortunately, certification of specific engine platforms is very expensive. Also, cost of prototype systems and manufacturing are significantly higher at the early stages than in the later stages of commercialization. Without the funds your bill contemplates for emerging technologies, it will be difficult for CMS to pursue our diesel emissions program in a timely and cost-effective manner.

I understand and appreciate that your bill is not a research bill. The focus of your bill is to get pollution control equipment on the street to clean up the air. Hopefully or however, I applaud your vision to realize there are a lot of possibilities to do more with development of new technologies. I am looking forward to competing for these funds and giving my company an opportunity to help advance diesel engine technology in this country.

CMS and other companies will be able to pursue the best technologies to reduce emissions not only in new engines but also in existing engines if S. 1265 is passed. This Act will allow our company and others to drive forward emerging technologies to be available in the short term while allowing us to meet our long term financial and regulatory goals.

Passage of S. 1265 will be a significant step in the right direction towards controlling the harmful effect of NOx, particulate matter and sulfur dioxide on the environment. We at CMS fully support this bill and the financial assistance it will afford emerging technologies to develop and become certified with the EPA and CARB.

The diesel emissions problem is a national problem that is in need of Federal legislation and funding. I urge you to pass the Act on behalf of CMS, Delaware and the Nation.

Thank you very much.

Senator VOINOVICH. Thank you, Mr. Nemser.

Mr. Cross, I think some might not understand why this legislation is needed since the sulfur content of diesel fuel is being lowered.

Mr. CROSS. Ultra-low sulfur diesel.

Senator VOINOVICH. One of the things that came up when I was in Dayton last week was the issue of this low sulfur fuel on vehicles that are old and need to be retrofitted. Are we going to have any kind of benefit from the low diesel fuel on vehicles that are not retrofitted and what kind of benefit will we get from those that are retrofitted versus the new vehicles you will have coming on the road?

Mr. CROSS. The first part of your question asked about the benefit of ultra-low sulfur diesel fuel on engines in service. There is an immediate benefit even when that engine is not retrofitted with an emissions control device.

The amount of the benefit depends on the type of fuel that was in use prior to the adoption of ultra-low sulfur diesel. Our estimates are in the range of 3 to 7 percent reduction in particulate matter merely by adopting ultra-low sulfur fuel. While that doesn't sound like a huge amount, when applied to the millions of diesel engines in service, that amount quickly adds up to a very significant amount of PM reduction.

The second part of your question was about ultra-low sulfur diesel and how it enables retrofit technology and the kind of benefits we can get there. The key point is that ultra-low sulfur diesel enables the retrofitting of existing engines with devices like those Mr. Regan pointed out. A diesel particulate filter can reduce the PM by 85 percent, reduce carbon monoxide by up to 90 percent as well as harmful hydrocarbons.

The key there is ultra-low sulfur diesel enables the retrofits in many cases. Without it, some devices just won't work.

Senator VOINOVICH. How does it compare with the new vehicles that will come on the road next year, a retrofitted truck versus a new truck on the road?

Mr. CROSS. It depends on the starting point of the emissions from the existing vehicle. Say it was an engine originally certified at 0.1 grams of particulate matter, the verification of these devices is to achieve 85 percent reduction so you could end up with a vehicle that is at 0.015 grams of particulate matter per break horse power hour. That compares to the 2007 standard which is at 0.01, so you are getting very close to the 2007 levels of PM if you can make ultra-low sulfur fuel available and through the funding available in the Diesel Emissions Reduction Act, promote the adoption of retrofits.

Senator VOINOVICH. From a layman's point of view that the retrofitting of these 11 million vehicles out there is going to be not equal to a new vehicle on the road using this ultra-low sulfur fuel, but it is pretty darn close?

Mr. CROSS. With those engines that were put in service at the 0.1 grams, they get very close.

Senator VOINOVICH. When did those vehicles come out?

Mr. CROSS. Per that chart, I believe it was part of the 1994 standard to 0.1 gram, so engines that were put in service since 1994.

Senator VOINOVICH. Senator Carper.

Senator CARPER. First of all, to all of you, welcome. Thank you for being our partners in many cases in developing this legislation.

I certainly applaud Senator Voinovich, those on his staff and everyone involved in bringing us to this point in time.

I especially want to welcome Stuart Nemser to this panel and this hearing. We are delighted that you are here and proud of what your company is doing.

I have a couple of specific questions for Mr. Nemser but before I ask those, let me ask a question about whether it is possible to make money for a private sector company to develop products to sell in this country and in other countries? Is it possible to do good and do well at the same time by virtue of the technologies that you are developing?

Mr. REGAN. In our case, it certainly is. The United States has led the world in terms of emission reductions. We were the first with the catalytic converter and we are moving ahead with tightening those regulations. Every time we tighten them we have to develop a new product.

In our case, we are exporting these products today. These diesel particulate filters are being exported to Europe and Japan. We are exporting the core of the catalytic converter to China. This has been an industry which in the United States that is on the cutting edge. We make it here so it does pose itself as a very good expert for the United States. We are still in the lead.

Senator CARPER. Mr. Cross, did you want to add to that?

Mr. CROSS. I would agree there is the opportunity to make money. It is becoming very competitive. The investments required to get ready for the next round of emissions regulations are very expensive but there are opportunities to make money in the retrofit business and we hope also as we release excellent products for 2007.

Senator CARPER. A couple of questions for Mr. Nemser. First, can you give a little more detail about your membrane technology that you developed?

Mr. NEMSER. Basically, the membrane module looks similar to this except there is a part out here and the air from the turbocharger of a diesel engine regularly goes directly to the engine, it goes through our membrane device, oxygen enriched there comes out as bled off and cool nitrogen enriched air is then fed directly to the engine at the original pressure, 30 pounds of pressure. So the preferential permeation of oxygen allows us to feed nitrogen enriched air to the engine which significantly reduces the NOx emissions.

Since people have talked about sulfur, I would say since this is at the front end, our capability and performance is not dependent on the sulfur level in the fuel. So we are going to give 50 percent reduction in NOx whether it is high sulfur fuel or low sulfur fuel.

Senator CARPER. How easy is it to install or retrofit using the technology that you have developed?

Mr. NEMSER. It is fairly easy. If there is room and in most cases there is room, it sits between the turbocharger and the inlet to the engine itself. We have successfully retrofitted locomotive engines, marine engines, on-road engines and some diesel generator sets. There are some cases, diesel generators in particular, if there isn't room between the turbocharger and the engine, it is difficult but

most of the market there is room which is why we have been successful in retrofit to date.

Senator CARPER. What kinds of applications do you foresee for your technology? Mention them again.

Mr. NEMSER. Locomotives, marine, off-road and diesel generators. We like applications that are high power and high temperature, all applications with the possible exception of on-road which has too much variation in operation, it would be the hardest of the group for us to meet.

Senator CARPER. How long will the EPA or the California Air Resources Board certification process take? Do you have any idea?

Mr. NEMSER. From where we are now, we have about 12 to 18 months to be ready for that. We estimate the actual certification would take probably in the 3 to 6 months time frame once we had the data to move forward.

Senator CARPER. How far are you through that process for both EPA and the California Air Resources Board?

Mr. NEMSER. Related to this application, we are working with them on some other applications, but related to diesel retrofits, we have not approached them at this point. We are presently working with a locomotive company and a marine application. To date we have been at one cylinder and now we are going to full scale engines fourth quarter this year, first quarter of next year.

Senator CARPER. I have no idea what it costs to go through these certification processes. Can you share with us what it might cost?

Mr. NEMSER. Our estimate at this point to get us ready for certification would be probably $750,000 and the actual certification will probably be closer to $350,000 to $500,000, taking 3 to 6 months.

Senator CARPER. How do you know that it is worth that expense?

Mr. NEMSER. The answer is we expect to go into that with our partners, the locomotive company and the marine company. I don't think we have done that analysis at this point, the risk reward. If that can be subsidized, it is going to make the analysis that much easier.

Also, I think, and I am speculating, obviously, it will further incentivize our locomotive and marine partners to participate because right now we are focused on new engines with them in 2008 and 2010 and are encouraging them in the retrofit and this will help.

Senator CARPER. Thank you.

Mr. Schneider, is there anything else you want to share with us that has come to mind listening to the comments of your colleagues?

Mr. SCHNEIDER. Just one thing. There are 11 million existing engines on the road but it would be wrong to think of the money from this bill or any approach to them as being a 1 size fits all type of approach. It may mean looking very carefully at which engines get priority for clean up and I think the program in this bill was set up to do that.

The ranking criteria I think are well thought out. Like we were just discussing with E-Check, a small percentage of diesel vehicles may be responsible for a big percentage of the pollution. To the ex-

tent we can find the sweet spot like that in this, we may be able to do more with less money.

So the notion of necessarily having to go out and put a $7,000 retrofit on 11 million vehicles, if you do that math, it looks pretty grim but I don't think the picture should really look like that. I think it is going to be more specific than that and probably less costly than that.

Senator CARPER. All right. Thanks to each of you whether you happen to be from Delaware, Ohio or any other place. We appreciate your collaboration and presence here today. Thank you.

Senator VOINOVICH. Is there anyone else who would like to comment?

I have technology money, 10 percent, is that a big deal?

Mr. NEMSER. To me, it is.

Mr. SCHNEIDER. To me as well.

Senator VOINOVICH. Mr. Regan, you have spent how much money on the research?

Mr. REGAN. We are further along than my friend from Delaware in terms of developing the technology. So we have already been through all the certification processes for on-road vehicles and the problem we are having right now in terms of off-road equipment is getting them done. There are some testing issues EPA has to go through, and we are sort of in the queue.

We are not at the point where we are sort of working on technology that hasn't been proven. There have been over 1 million units of this stuff already sold. It has been proven.

Senator VOINOVICH. So the 10 percent is more valuable?

Mr. REGAN. It is more valuable to the smaller company.

Senator VOINOVICH. Do you think it is a good idea to have it out there?

Mr. REGAN. Absolutely. We always have to try to figure out how to improve. We have to obsolete ourselves or we are not going to succeed.

Senator VOINOVICH. We have been kicking around Kyoto and global warming and a lot of things before this committee. Senator Carper and I had a chance to meet with Tony Blair a month or so ago, and talked to him about moving forward with some effort to deal with some of the environmental problems.

It was interesting the Judge talked about the people going to their emergency rooms. I see that big black area in my part of the world and I wonder if they are experiencing the same thing as folks coming in and is it attributable to respiratory problems. I was in China a couple months ago, and they have a horrendous problem over there.

If you were President of the United States or Tony Blair and you had that situation, what would you do to try and get the world's attention to doing something practical about dealing with it? Forget about global warming, talk about NOx, SOx, mercury because we know mercury is moving and the estimate is 20 percent of the mercury in the Great Lakes comes from Asia. What would you do?

Mr. REGAN. I work for a technology company. We have been around 152 years. The reason we have succeeded is we are constantly trying to go to the new frontier. I think we need to have a really significant technology initiative. We can get more efficient.

DOT estimates if we could convert one-third of our fleet of cars to diesel, we would reduce our consumption of imported oil by one-third.

So there are things that can be done and we can have a focused technology effort, if we had a man in moon effort to try to figure out how we will use technology to become more efficient, to use what we are using today but use it more efficiently so we use less.

Senator VOINOVICH. Would you get the top polluters together at a table and start talking about some kind of new initiative?

Mr. REGAN. How I would get the top polluters? I don't know if you want to call them polluters, but I would get those companies involved in these emissions and the companies doing technology innovation in a room and start talking about how we can collaborate to solve the problem.

Too many times there is a concern about the cost associated with investment in these technologies. But you know it is not a zero sum game. This stuff all stays within our economy or we export it. This means for every dollar of cost we spend of emissions control equipment there is some other job created for the production of new technology and new equipment to clean up the environment.

I think we need to get everybody in the room, both the technology folks and the folks that want to clean up their stacks and figure out how to do it most efficiently. The solutions are there. You have a technology component in your bill. You are trying to push the edge. We have to push the edge.

Senator VOINOVICH. Mr. Schneider.

Mr. SCHNEIDER. I will take a shot at that. We need to do all of it and carbon dioxide is very tough. You all just had a close encounter on that in the Senate with the Energy bill and everybody had a little different approach to it. It says a lot about the Senate that it has come along to the point where there is a Hagel approach, a Bingaman or National Commission on Energy Policy approach, and there is a McCain–Lieberman approach and so forth. It is very good for that to happen. I am one of those who hopes something will mature from that even post-Energy bill.

Carbon dioxide is a sticky wicket. It is hard to solve that problem and it is going to take a long time in getting the benefits because carbon dioxide is resident in the atmosphere for many years. If we believe the climate scientists that we listen to about the graveness of the problem, we need to act quickly and decisively and do something that will make a difference.

One of the witnesses said if we zeroed out emissions in Cleveland, we wouldn't see a benefit or reach whatever. We could do a thought experiment like that about carbon dioxide and wouldn't see the benefits for some time. We have to do it, put probably most of our attention in that direction, but it is not the only pollutant that has an effect on the climate. Ozone is one that has an effect on the climate and methane is another. Those are things that are part of the Kyoto process, part of the IPCC process.

One of the ones not talked about as much, we are talking about here today which is soot, the same black carbon that comes out of a diesel engine is a warming agent, a climate-forcing, warming agent in the atmosphere. That science is not as well established as some of the other. I don't know if you have ever had a presentation

by Jim Hansen from NASA but he is quite outspoken on this point and there are others as well and the IPCC lists black carbon as a major climate forcing warmer.

So getting diesel soot and other forms of black carbon soot out of the atmosphere will have a climate benefit. It is a little known twofer that is in this bill or any type of policy measure that is going to address the emissions of black carbon.

In the first world or the developed world or whatever you want to call it, that is primarily a diesel issue and in the less developed nations, it may be biomass burning or some other sources that are going to be most important. There is a lot of scientific work yet to do to be able to put fine numerical targets on the carbon dioxide equivalence of soot.

One of the things I would urge you to think about is that there are some measures that could be done more along the lines that we are doing, hopefully getting this bill done, the Diesel Emissions Reduction Act, that could bring more immediate benefits in terms of climate because this black carbon is resident in the atmosphere for a much shorter period of time. That means if we get it out of the atmosphere, the cooling effect will come much quicker.

So it is not a very complicated scientific matter, everyone understands that black carbon absorbs heat and warms the atmosphere, but it is hard to put a number on and I would urge you to give your attention to it because it might be a worthwhile avenue to explore.

Senator VOINOVICH. I am glad to hear your perspective on it. This idea of getting all the technology people together to see where we are, we want to become less reliant on or self sufficient and we have talked about fuel cells and I read all kinds of things about that but people say it is 10 to 15 years before it.

Somehow I believe if they really wanted to do it quicker, they could, if the money was there to do it. It gets back to simply thinking, and we have had this problem since I have been in the Senate, that we have four pollutants, four emissions or whatever it is and we have a big debate about the fourth one and there are still the other 3. It seems to me that if we could get folks together to talk about, yes, the fourth one is the problem but we also have these others and try to get them to things about some of those, that we would be moving the ball down the field.

I am really concerned, being in China, you read the stuff, you talk about problems here, they have really significant problems and environmental groups are starting to pop up even though they supposedly have to get licensed to go to NGOs, they are starting to move to other places. People are starting to get concerned about it. I think sitting down and looking at some practical things we can start to do as a multi-country thing would be really helpful.

Quite frankly, I think it would allow us to take some of the technologies you have and sell it. We might find other places have some good stuff that we could use also. So you get everybody out there working on it and you get a global marketplace for it, I think we could see some real progress made in these areas.

In terms of the climate change, a lot of that stuff, if we just start to move on it, I would like to see us move down the road. That is why I like this bill a lot because I know it is practical, it is good

from a cost benefit point of view. If you put the money in, you know you will get a return on your investment.

I think that is what we really need to do, look at all the stuff that is being advanced and put a dollar figure on it and figure of the things out there, what are going to be the most effective in terms of reducing emissions and then figure that is where we should be putting our energy to make a dent in this.

I thank you all for being here today. Hopefully the folks in the Senate and the House will see the wisdom of this and we will work on the Administration to come up with some money for this program because it is a modest investment with great return. I am hopeful somebody will see that.

Thank you.

[Whereupon, at 4:45 p.m., the subcommittee was adjourned.]

[Additional statements submitted for the record follow:]

STATEMENT OF FRANK LAUTENBERG, U.S. SENATOR FROM THE STATE OF NEW JERSEY

Mr. Chairman, thank you for holding this hearing and giving us an opportunity to discuss this important bill.

I'm proud to be a cosponsor of S. 1265, the Diesel Emissions Reduction Act of 2005.

I want to speak to you today as a grandfather because one of my 10 grandchildren has severe asthma.

If you know a child who suffers from this disease, it breaks your heart to have to tell them that they can't go outside and play on certain days because the air isn't safe.

And even if you don't know anybody with asthma, you know that something is wrong when it isn't safe to breathe the air.

There are 11 million diesel-powered vehicles in the United States. These vehicles account for about half of the most dangerous types of air pollution—fine particulate matter and nitrogen oxide, which leads to ozone.

Almost all of New Jersey exceeds the safe standards for both of these substances. Nationally, 65 million Americans live in areas where they are exposed to excessive levels of particulate matter—and 111 million are exposed to unsafe levels of ozone.

Children are especially affected, because their lungs are still developing. High levels of particulate matter have been associated with crib death, and ozone increases hospitalization for asthma.

Exposure to these substances isn't just harming young lungs—it's literally killing thousands of people.

A study for the Clean Air Task Force estimates that 21,000 people will die prematurely each year from exposure to particulate matter soot from diesel vehicles.

The same study projected that another 27,000 people would suffer heart attacks because of diesel pollution, and that 2.4 million work days would be lost due to illness.

Diesel exhaust also contains 15 known or suspected carcinogens.

Obviously we need to do whatever we can to curtail pollution from diesel engines.

Most of EPA's rules and regulations deal with new diesel engines. We have technology to retrofit old engines, which can last as long as 20 years.

This is a great bill because it will clean up those diesel engines that are already on the road, spewing pollution into our air every day.

As a grandfather, I want to thank Senator Voinovich, Senator Carper, and all the cosponsors of this bill as well as the witnesses who are here today in support of it.

Thank you Mr. Chairman.

STATEMENT OF WAYNE NASTRI, REGION IX ADMINISTRATOR, U.S. ENVIRONMENTAL PROTECTION AGENCY

Mr. Chairman, and members of the subcommittee, I appreciate the opportunity to come before you today to testify about the Diesel Emissions Reduction Act (S. 1265) and the diesel emission reduction activities of the Administration.

As the Regional Administrator for Region 9 of EPA, I am responsible for protecting public health and the environment in Arizona, California, Nevada, Hawaii,

the Pacific Islands and 147 federally recognized tribes in the Pacific Southwest. I am pleased to be here representing my colleagues at EPA to convey that reducing diesel emissions is one of our top priorities. In my tenure as Regional Administrator, I have focused a great deal of my personal energy on this topic. By working together with the States and other partners, we are successfully piloting a comprehensive program on the West Coast to reduce these harmful emissions. My experience has shown me that there are endless prospects across the nation to reduce diesel exhaust. I welcome the opportunity to share my experience and to highlight the diesel program activities that the Agency has fostered.

Emissions from older diesel engines pose a significant risk to our nation's health as they contain more tiny particles called "fine particulate matter." Of the many air pollutants regulated by EPA, fine particle pollution is one of the greatest threats to public health and a significant challenge for the Agency. Studies in the peer-reviewed literature have found that these microscopic particles can reach the deepest regions of the lungs. Exposure to fine particles is associated with premature death, as well as asthma attacks, chronic bronchitis, decreased lung function, and respiratory disease. Exposure is also associated with aggravation of heart and lung disease, leading to increased hospitalizations, emergency room and doctor visits, as well as the continuous use of medications. Addressing these risks is a priority for the Administration. That is why EPA established strong standards for new diesel engines. In addition, the President's fiscal year (FY) 06 budget request includes $15 million for advanced diesel retrofits through the Clean Diesel Campaign and $10 million for Clean School Bus USA program. Recently, Administrator Johnson said, "New diesel technology holds great promise for improving air quality across the nation." For these reasons, Mr. Chairman, we appreciate your holding this hearing on diesel emissions reduction strategies.

Mr. Chairman, as you know, many areas of the country are designated as nonattainment and do not meet the National Ambient Air Quality Standards (NAAQS). Recently, EPA designated over 400 counties as out of compliance with the 8-hour ozone standard and over 200 counties as out of compliance with the fine particulate matter standard. Diesel exhaust contains both particulate matter and nitrogen oxides (NOx), which contribute to ozone (or smog), and to fine particle pollution. In addition, diesel exhaust is a likely human carcinogen.

As I mentioned, EPA has published stringent regulations for both on-highway engines and off-road engines that will take effect between 2007 and 2014 and will achieve over $150 billion in health benefits when fully implemented in 2030. Diesel engines, however, can last upwards of 20-30 years and EPA's regulations only apply to new engines and vehicles. There are approximately 11 million engines in today's fleet that continue to emit high levels of pollution that can be reduced through the installation of new control technology.

Building on the successes of EPA's regulatory and past voluntary efforts to reduce emissions from diesel engines, EPA has created the National Clean Diesel Campaign to aggressively reduce diesel exhaust across the country through various control strategies and the active involvement of national, state and local partners. In addition to implementing our current and proposed stringent mobile source regulations for new engines, the National Clean Diesel Campaign also supports voluntary emissions reductions from the existing fleet of mobile engines. Voluntary emissions reductions are one of the most cost-effective strategies to address diesel exhaust from the existing fleet. Retrofit programs that include cleaner fuel use, add-on control technology, engine replacement, and idle reduction can provide a health benefit to cost ratio of up to 13 to 1. I am also pleased to say that we will be issuing guidance to states on how to calculate the emissions benefits from diesel retrofit programs so that they can use the credits for their State Implementation Plans (SIPs).

Over the last 5 years, EPA has brought forward a number of very successful voluntary programs all designed to reduce emissions from the diesel fleet. In conjunction with state and local governments, public interest groups, environmental organizations and industry partners, EPA has established a goal of reducing emissions from the over 11 million diesel engines in the existing fleet over the next 10 years.

EPA's Voluntary Diesel Retrofit and SmartWay Transport Partnership Programs have established several hundred projects that involve cleaner diesel, idle reduction and other environmental control strategies across the country, achieving emissions reductions now that will yield benefits for years to come. Many states, well ahead of EPA's requirements, are using ultra-low sulfur diesel fuel that reduces harmful particulate matter emissions and enables the use of add-on control technology. These projects are serving as examples of innovative, cost-effective models for diesel emissions reduction. In total, hundreds of partners nationwide are successfully implementing cleaner diesel projects, resulting in a foundation for the Agency's efforts to reduce diesel pollution and protect human health and the environment. In addi-

tion, to help our stakeholder communities identify viable retrofit technologies, the Agency has established a technology verification program that serves a testing and evaluation function for new, innovative emissions reductions technologies poised to enter the market.

When we launched the National Clean Diesel Campaign in 2005, we analyzed the in-use fleet and determined general sectors, specifically ports, freight, construction and agricultural, as the best opportunity to obtain significant emission reductions. This sector-based strategy has helped us target our resources. In addition, we identified school buses as a top priority because children are especially at risk from air pollution as they breathe 50 percent more air per pound of body weight than adults. Recurrent childhood respiratory illness is a risk factor for increased susceptibility to lung disease later in life.

A critical part of the National Clean Diesel Campaign is the work being done at the state and local level. Several of EPA's regions have initiated collaborative efforts to address these emissions locally. For example, in the West, EPA's Regions 9 and 10 spearheaded the West Coast Collaborative, an ambitious public-private partnership that brings together leaders from Federal, State and local government, the private sector and environmental groups in California, Arizona, Oregon, Idaho and Washington, Alaska, Canada and Mexico committed to reducing diesel emissions along the West Coast. In FY (05), the Collaborative will implement 16 projects totaling over $1.3 million in EPA funds and over $5.6 million in matching funds from Collaborative partners to retrofit diesel construction equipment with particulate matter traps, develop a biodiesel additive that reduces NOx and implement a liquefied natural gas powered locomotive system that services the nation's two biggest ports in Los Angeles and Long Beach, to name a few.

In addition, the Midwest Clean Diesel Initiative, the Northeast Diesel Collaborative and the Mid-Atlantic Diesel Collaborative have all initiated efforts to reduce diesel emissions in their respective areas of the country. These initiatives have convened stakeholders meetings and educational workshops and have implemented significant collaborative diesel emissions reductions projects.

Over the last few years, we have held several grant competitions that provide funding assistance to a variety of stakeholders interested in reducing diesel emissions. Support for these voluntary programs has been overwhelming. Grant solicitations are met by demand ten times greater than available resources and winning grant programs have leveraged an average of 2 to 4 times additional resources. For example, the West Coast Collaborative requests for proposals for $1.3 million attracted almost $14 million in funding requests and finalists leveraged over $4 for every federal dollar granted.

We know states such as California, with the Carl Moyer Program, and Texas, with the Texas Emission Reduction Plan (TERP), can be creative and are quite effective in providing funding opportunities for reducing diesel emissions. In addition, the State of Washington has set aside funding to reduce emissions from its school bus fleet over the next several years. Finally, Mr. Chairman, I know you're aware of this but perhaps others are not: the Mid-Ohio Regional Planning Commission (MORPC) has formed a diesel emissions subcommittee with representatives from industry, environmental organizations, State and local government, and a host of other stakeholders that are looking into innovative ways to provide funding to reduce diesel emissions. Needless to say, the topic of reducing emissions from the existing diesel fleet is at the forefront of mobile source environmental control discussions.

From these various programs, we have learned some important lessons. Lack of capital can be an obstacle to implementing diesel emission reductions activities, especially for small businesses. EPA has found that Federal oversight will help target projects that are cost-effective, are located in areas with air quality needs and maximize public health benefits, among a host of other factors. We have also found that state utilization of matching funds acts as an incentive to maximize diesel emission reductions.

Mr. Chairman, reducing emissions from older diesel engines is one of the most important air quality challenges facing the country. Even with more stringent heavy-duty engine standards set to take effect over the next decade, over the next twenty years millions of older diesel engines will continue to emit large amounts of pollution which contributes to serious public health problems. In addition, cost-effective technologies exist today and cleaner fuels are being deployed throughout the country. As I mentioned earlier, there is broad stakeholder support for reducing diesel emissions. Although the Administration supports efforts to reduce emissions from both new and existing diesel engines, we are concerned that the funding authorized in this legislation goes well beyond the funding for such efforts called for in the President's 2006 budget. Like similar authorizations that go well beyond the

President's budget, we cannot support the authorization levels in this bill as they could create pressure to appropriate those levels in the future. However, we look forward to working with you to address the public health goals of the legislation consistent with the fiscal constraints that we all must confront.

I want to thank you, Mr. Chairman, and your colleagues for your leadership on this important issue. This concludes my prepared statement. I would be happy to answer any questions that you may have.

STATEMENT OF JUDGE MARGARET KELIHER, DALLAS COUNTY COMMISSIONER'S COURT, DALLAS, TX

INTRODUCTION

Good afternoon, I am Margaret Keliher, Dallas county judge, head of the Dallas County Commissioner's Court. I am on the Board of the Texas Environmental Research Consortium, I am a member of the North Texas Clean Air Steering Committee, I am a member of the Texas Clean Air Working Group and a member of the Regional Transportation Council's Committee for Clean Air.

I am pleased to be here today to express support for Senate bill 1265, The Diesel Emissions Reduction Act of 2005. Mr. Chairman, I applaud your leadership in developing this important legislation.

The Dallas-Fort Worth (DFW) region faces a very challenging task in developing a plan to meet the 8-hour ozone ambient air quality standard. Preliminary air quality modeling by the Texas Commission on Environmental Quality shows that the DFW ozone nonattainment area will not attain the 8-hour ozone standard without significant reductions from Federally preempted sources, especially in the nonroad sector.

While Texas has worked aggressively to reduce emissions from in-use diesel engines through the highly successful Texas Emission Reduction Plan (TERP), which provides grants for diesel engine retrofits or replacements, the State funding is inadequate to support all of the necessary projects to ensure clean, healthy air for our residents. Federal funding for these emission reduction projects would be a welcome and timely addition to our toolkit.

OVERVIEW AND SUCCESS OF THE TEXAS EMISSION REDUCTION PLAN (TERP)

In 2001, the Texas Legislature established the Texas Emissions Reduction Plan (TERP). According to its authorizing legislation, Senate bill 5, the TERP was intended as a tool to "assure that the air in the State is safe to breathe and meets minimum federal standards; [and to] develop multi-pollutant approaches to solving the State's environmental problems—" Originally authorized through 2008, the TERP was just extended by our Legislature through 2010.

The centerpiece of the TERP is the "Emissions Reduction Incentive Grants Program," which funds projects in 41 counties where air quality violates or is close to violating EPA standards. The principal goal of this grant program is to reduce smog-forming nitrogen oxide (NOx) emissions, with an explicit goal of reducing a combined 49 tons per day in the Houston and Dallas/Fort Worth areas, and another 7 tons per day in other counties. Eligible projects include new purchases, replacements, repowers, retrofit technologies, infrastructure, and qualifying fuels. Since 2003, program funding has been roughly $120-140 million annually.

As of June 8, 2005 approximately $192 million in TERP grant funding has been awarded or committed to 732 projects through seven competitive solicitations. Over their lifetime, these projects are expected to reduce NOx emissions by nearly 41,000 tons at a cost of roughly $4,700 per ton, which is very cost-effective when compared to other control options. Projects range in size from a few thousand dollars for replacement of a single piece of construction equipment to $11 million for the retrofit and fueling of a large fleet of transit buses. The executive summary of the biannual review of the TERP is attached.[1]

The popularity of the TERP is evidenced by the 560 applications received in the latest round of grant solicitations, which ended on July 1.

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[1] Please note that while the summary data presented in this paragraph includes projects recommended for funding in the first round solicitation of fiscal year 2005, these projects are not included in the attachment.

THE DFW AREA NEEDS FEDERAL HELP TO MEET CLEAN AIR STANDARDS

In comparison to more industrialized areas of the country, like Houston, the DFW area's ozone pollution problem is disproportionately influenced by emissions from on-road and nonroad mobile sources—the so-called federally preempted sources that are largely out of the reach of State and local regulations. The Texas Commission on Environmental Quality estimates that in 2010, after the implementation of existing control measures, nonroad and onroad mobile sources will constitute 32 percent and 38 percent, respectively, of smog-forming nitrogen oxide (NOx) emissions in the region (see Exhibit 1). Thus, 70 percent of our region's pollution comes from Federally preempted sources.

This emissions breakdown is especially staggering in light of the estimated pollution cuts that may have to be made in order to comply with the 8-hour ozone standard by 2010. Just last month, the TCEQ told the North Texas Clean Air Steering Committee that an additional 45 percent cut in NOx emissions might be required in the region. This preliminary forecast worried many of us in the room because only 30 percent of the total, remaining NOx emissions in our region in 2010 will come from sources that can be directly regulated by the State.

Consequently, our region needs assistance from the Federal Government to reduce emissions from federally preempted sources. While the TERP has been an effective tool in this regard, State funding will not be enough to meet the lofty emission reduction targets being forecast by the TCEQ. And it should be noted that TERP funds are divided among various regions of Texas—in fact the DFW area only received roughly one-third of the TERP funds awarded to date. Federal funds from the Diesel Emission Reduction Act would be a welcome supplement to the TERP, which would allow us to partner with more diesel fleet owners to clean up their fleets.

One other area where the Federal Government could help is by swiftly, adopting emission standards for federally preempted sources. For example, we appreciate recent proposal of emissions standards for new stationary diesel engines. The sooner that EPA adopts standards for these engines and others, such as those used in locomotives, the sooner that the DFW area will realize air quality benefits and be able to efficiently incorporate the resulting pollution reductions in on-going air quality planning and management efforts.

THE DIESEL EMISSION REDUCTION ACT CAN HELP MAKE THE TERP EVEN BETTER

As mentioned above, even though the TERP has proven to be a good model for an effective incentive program, its funding is not sufficient to support all of the possible projects to reduce harmful exposure to diesel air pollution. Clearly, much more could be done.

For example, the Texas Legislature just added to the TERP a program to reduce emissions of diesel exhaust from school buses, which can build up to unhealthy levels inside the bus cabins where children travel to and from school. However, in a difficult budget year, the Legislature was not able to provide a secure funding stream. The Diesel Emission Reduction Act, if enacted, could serve as complementary source of funding to enable programs like the recently created Clean School Bus Program to flourish.

HOW THE DIESEL EMISSION REDUCTION ACT CAN STIMULATE INNOVATION

One key lesson of the TERP is that meaningful financial incentives will lead private and public fleet owners to find ways to clean up their vehicles and equipment. In the case of the TERP, it has certainty been true that "if you build it, they will come." With the possibility of federal funding within reach, I expect many communities and businesses will devise increasingly more innovative and efficient programs to control diesel emissions.

Another result of providing financial incentives has been the development of new emission control technologies. By increasing public investment for diesel emission reductions, the Diesel Emission Reduction Act will further stimulate technological innovation by ensuring a reliable for new control devices and, over time, help reach the efficiencies of scale necessary to drive down costs.

THE DIESEL EMISSIONS REDUCTION ACT WILL ENCOURAGE MORE STATE PROGRAMS

Twenty percent of the funds appropriated to DERA will be distributed directly to States that apply for them. In addition, 10 percent of the funds are made available to serve as a match to State funding. These two provisions create an incentive for other States to develop comprehensive diesel emission reduction program and contribute to their funding. I am sure that these states, prompted by the opportunities

provided by DERA will learn, like Texas has, the valuable role that diesel retrofits can play as part of a State or localities overall plan to achieve healthy air.

In addition, the State Grant and Loan component of DERA is not intrusive or prescriptive. It leaves the decisions on how best to implement the State grant and loan program to the State. This allows all States to tailor their State grant and loan program to their specific needs, given their current air quality conditions, emissions inventory, and other complementary emission reduction efforts. The flexibility is especially helpful for States like Texas. States, like Texas, that have already developed their own programs will not have to spend time and energy redesigning their existing programs to fit anew mold.

CONCLUSION

Senate bill 1265, the Diesel Emissions Reduction Act, will help speed the transition to a cleaner fleet of diesel vehicles and help all Americans, including residents of the DFW Metroplex, breathe easier. Thank you for the opportunity to come before you today.

[See exhibit on page 70.]

STATEMENT OF JOSEPH P. KONCELIK, DIRECTOR, OHIO ENVIRONMENTAL PROTECTION AGENCY

Senator Voinovich, Senator Carper, members of the subcommittee, I am Joe Koncelik, director of the Ohio Environmental Protection Agency. Thank you for allowing me to address this important legislation to help improve air quality throughout our nation by reducing emissions from existing diesel engines.

This legislation is significant for two reasons. First, the emission reductions it would provide will help communities comply with the new ozone and fine particle air quality standards. Second, these are not reductions that States can achieve individually on the kind of broad basis that this bill makes possible.

Diesel emissions significantly contribute to both ozone and fine particle air quality problems. Ohio faces substantial challenges in meeting these new standards, particularly in Senator Voinovich's hometown, Cleveland. In all, Ohio has 33 counties that don't meet the 8-hour ozone standard and all or part of 27 counties that don't meet the fine particle standard.

U. S. EPA's rules for new diesel engines and fuels will help in the long run. By 2030, they will reduce diesel emissions as much as 80 percent from 2000 levels. But we must meet the new air quality standards well before 2030, at the latest 2010. Therefore, EPA's rules will not be a substantial factor in helping us meet our attainment deadlines because we need reductions must faster. In addition, the federal rules do not address the 11 million diesel engines already in use. Rather, the federal rules rely on new diesel engine standards that will achieve reductions only as new vehicles are put into service. States, such as Ohio, that are facing significant challenges in meeting the federal clean air standards cannot wait for 20 or more years for vehicle fleet turnover to occur, we need reductions now to help us attain the standards. This bill helps to close that critical gap.

Another reason this bill is so important is that states have a harder time regulating diesel engines than other traditional sources of pollution, such as industrial sources. On-road diesel equipment moves from place to place, indeed from State to State, making it very difficult for states to effectively regulate these sources of pollution. A national retrofit program is the only logical answer. Even off-road equipment such as construction machinery changes location, taking its pollution impact with it. A patchwork of State laws attempting to achieve emission reductions from existing diesel engines is impractical. This nationwide program, which still allows States to customize to meet their needs, is ideal.

Of course, I am pleased that the bill would allocate at least 20 percent of annual funding to the States to set up their own grant or loan programs for diesel retrofit. Ohio EPA is currently developing a grant program to retrofit school buses, funded by a portion of the penalties that companies pay for violating environmental laws. The potential synergy between that program and the Diesel Emissions Reduction Act of 2005 is exciting. By using our own program as a match for federal funds, we can extend the reach of both, targeting areas where we need the most air quality improvement, and improving both air quality and children's health.

In addition to providing air quality and public health benefits, this legislation also supports Ohio's economic recovery. Unless we are able to get meaningful reductions from vehicle emissions, we will have to make more stringent demands on industry. Ohio is already facing expensive new pollution controls and regulations in order to meet the new federal standard for ozone and fine particles that will reach into the

billions of dollars. These costs come at a time in Ohio when we are trying to rejuvenate our economy. Ohio remains very concerned about the impact of the strict deadlines imposed by U.S. EPA to meet the ozone and fine particle standards. The current deadlines are in some cases unrealistic and could chill economic growth in the state. We need innovative approaches that will accelerate pollution reductions without adding to the significant compliance costs the State already faces.

Existing diesel engines will continue to make up the majority of the diesel fleet for many years to come. That is as it should be. Certainly an Environmental Agency would not advocate scrapping perfectly functional equipment. At the same time, waiting for the vehicle fleet to turn over delays the benefits of EPA's requirements on new engines and fuels. The retrofit program in this bill is the best of both worlds.

I commend Senators Voinovich and Carper, along with the cosponsors, for this bipartisan effort to clean up our air and improve public health. We strongly support this legislative initiative.

STATEMENT OF MICHAEL CROSS, VICE PRESIDENT, CUMMINS INC., GENERAL MANAGER, FLEETGUARD EMISSIONS SOLUTIONS

INTRODUCTION

Cummins strongly supports the Diesel Emissions Reduction Act of 2005. There are 4 major points that Cummins would like to present to the committee:

1. New diesels are getting cleaner, but are very durable and the population that is in service today will be in use for years to come.
2. Retrofits of after treatment devices in the exhaust and engine replacements can clean up these in-service diesels and provide cost effective, immediate benefits to the environment.
3. The Diesel Emissions Reduction Act will support state and community efforts to achieve the new national ambient air quality standards (NAAQS) by funding cost effective retrofits and engine replacements that provide the greatest benefit to the environment—particularly in environmentally sensitive and areas of high populations.
4. Ultra low sulfur diesel fuel is essential to realizing the full benefits of the Diesel Emissions Reduction Act and to achieving enormous reductions in older and newer diesel-powered engines.

ABOUT CUMMINS INC.

The Company

Cummins Inc., a global power leader, is a corporation of complementary business units that design, manufacture, distribute and service engines and related technologies, including fuel systems, controls, air handling, filtration, emission solutions and electrical power generation systems. Headquartered in Columbus, IN, (USA) Cummins serves customers in more than 160 countries and territories through its network of 550 Company-owned and independent distributor locations and more than 5,000 dealer locations. With more than 28,000 employees worldwide, Cummins reported sales of $8.4 billion in 2004. In 2005, Cummins was ranked #1 for corporate ethics by Business Ethics magazine.

Cummins Vision: Making people's lives better by unleashing the Power of Cummins

That simple, yet ambitious, statement serves as the guiding vision for Cummins and its 28,000 employees. The Company takes pride in manufacturing engines, generators, filters and related products that serve the varied needs of its customers worldwide. To do that, Cummins unleashes the power of its employees: Their energy and commitment make it possible for the Company to maintain a leadership position in the markets it serves. Cummins also recognizes that with its role as a corporate leader comes a responsibility to help improve the communities in which employees work and live. It is a responsibility the Company brings to life through its actions and the activities of its employees.

NEW DIESELS ARE GETTING CLEANER AND CLEANER, BUT OLDER DIESELS ARE EXTREMELY DURABLE AND WILL BE IN SERVICE FOR YEARS TO COME

Diesel engines truly are the workhorse of the American economy. EPA has finalized diesel fuel and new engine regulations that will reduce diesel emissions from new diesel buses and freight trucks by 99 percent, and non-road equipment by more than 80 percent from 2000 levels. EPA's 2001 On-highway and 2004 Non-road Diesel Engine rules will greatly improve the environment and protect public health, but, according to EPA, the full benefits will not be realized until 2030 because of

the durability of the 11 million engines already in service. A diesel engine used to power school buses, trucks, railroads, agriculture processes and emergency response vehicles will last for hundreds of thousands of miles over a lifetime of up to 30 years.

The Diesel Emissions Reduction Act addresses the issue of emissions from the higher-emitting engines that are currently in service and is an effective complement to EPA's rules for new engines. Some of the technology that will be used on these new engines, along with ultra low sulfur diesel fuel, can be applied to older engines in order to significantly and immediately reduce various amounts of oxides of nitrogen (NOx) (a precursor to ozone), hydrocarbon and particulate matter (PM) emissions from these sources. The Diesel Emissions Reduction Act will enable the application of this technology to today's in-service population and make a significant positive impact on the environment.

Retrofitting older engines with current emission reduction technology has an immediate, positive impact on the environment

Aftertreatment exhaust devices (commonly referred to as diesel retrofit devices or "retrofits") provide enormous benefits to air quality through significant emission reductions. Because older engines emit more particulate matter and oxides of nitrogen than newer engines, applying this technology to older vehicles can provide an even greater positive impact than when applying the technology to newer, lower emitting diesels.

Retrofits provide an immediate positive impact on the environment by reducing emissions from diesel-powered vehicles. Many of these emission-reduction devices are direct replacements for the existing vehicle muffler; other systems are more extensive (Attachment I). When an emission reduction device is installed, the benefits are immediately recognized. Depending on the pre-retrofit engine emissions levels, the duty cycle of the application and the type of retrofit device that is applied, retrofits can provide significant reductions in PM, NOx, carbon monoxide and hydrocarbons. Here are some examples. When a diesel oxidation catalyst is applied, particulate matter will be reduced by at least 20 percent, and carbon monoxide and hydrocarbons will be reduced by at least 70 percent. When a diesel particulate filter is applied, at least 85 percent of PM and 90 percent of carbon monoxide and hydrocarbons will be reduced. When Lean NOx catalysts and diesel particulate filter combinations are applied, at least 25 percent NOx and 85 percent PM are reduced (Attachment II). Many of these retrofit technologies exist today and have been in service for many years and can be confidently applied to engines that are in service. We do not have to wait until lower emitting engines are purchased in new vehicles to realize the benefits of applying this technology.

Re-powering existing vehicles with newer, cleaner engines is also a viable, cost-effective approach to improving the environment

There are some older engines that are not ideal candidates for retrofits. Repowering those vehicles with new engines can be a more appropriate solution to reducing emissions. The Diesel Emission Reduction Act would also support repowering existing diesels with either new or re-manufactured engines. Re-manufactured engines, such as Cummins ReCon engines, can be a cost-effective alternative. Factory re-manufactured engines and parts are not just repaired or rebuilt. These engines are re-manufactured to the original engine specifications. Every part is completely torn down and each component goes through a controlled process, which includes cleaning, inspection, salvage, new part replacement, re-assembly and testing. The Cummins re-manufacturing business was the first in the engine industry and Cummins has remained a leader in the re-manufacturing industry by meeting rigorous quality standards required of our customers. In all cases, our re-manufactured engines meet—and sometimes exceed—the emissions standards of the original engine specification.

Diesels continue to get cleaner and cleaner, and by 2010 will produce almost negligible amounts of NOx, PM and Hydrocarbons

From the inception of the Clean Air Act in the 1970s to the present, Cummins has reduced the NOx emissions by 90 percent and PM emissions by 73 percent from our heavy-duty, on-highway engines in the United States. Similar reductions of NOx and PM emissions have also been demonstrated in Europe and Asia.

In 2001, EPA moved forward with its rule to make heavy-duty trucks and buses run even cleaner. This rule requires reductions in PM and NOx in three steps in 2004 (pulled ahead to 2002), 2007 and 2010. By October 2002, Cummins had introduced the first complete line-up of engines to comply with EPA's 2004 step-down in emissions. EPA's emissions requirements will change dramatically for heavy-duty trucks between 2007 and 2010. Using ultra low sulfur diesel fuel and advanced tech-

nologies, NOx and PM from on-highway diesel engines will decline by 90 percent from 2004 levels. Specifically, NOx must be reduced from the current 2.5g grams/hp-hr to 0.2-grams/hp-hr by 2010. The particulate standard will drop to 0.01-g/hp-hr PM beginning in 2007.

As Cummins develops products for 2010, our goal is to meet or exceed the emissions targets while retaining the performance, fuel economy and reliability desired by our customers.

THE DIESEL EMISSIONS REDUCTION ACT

The Diesel Emissions Reduction Act establishes voluntary national and state-level grant and loan programs to promote the reduction of diesel emissions. The legislation authorizes $1 billion over 5 years ($200 million annually). The bill directs that 70 percent of the funds are distributed by EPA, 20 percent of the funds go directly to states to develop retrofit programs, and the additional 10 percent is available as an incentive for states to match the federal dollars.

The Diesel Emissions Reduction Act recognizes the clean air challenges ahead of states and communities and puts in place a mandate-free and flexible system to help address these challenges. In order to help states and communities meet the more stringent national ambient air quality standards, the Diesel Emissions Reduction Act establishes a voluntary diesel retrofit initiative to facilitate the reduction of emissions from our older diesel fleets. This program builds on proven state and local programs that have used new technology to "retrofit" or replace older engines. In doing so, cost-effective emissions reductions can be provided for these fleets, and environmental benefits can be immediately realized.

In the near future, states must revise or develop state implementation plans (SIP's) to reduce PM and ozone emissions in order to meet the new national ambient air quality standards. These states and communities must have the opportunity and flexibility to design programs to fit their own needs. The Diesel Emissions Reduction Act will be a critical tool to help states bring areas into attainment by encouraging the retrofitting or replacement of diesel engines currently in service.

Under this legislation, the Federal and state government authorities awarding the grants will see a wide range of proposals on how to address air quality challenges. The proposals will specifically quantify emission reductions, the geographic area that will be impacted, population densities and whether there are private or state funds available to match government funds. This legislation recognizes that there is not a common emission reduction solution that it best for every circumstance. There are a number of technologies that can be implemented to modernize existing diesel fleets. Furthermore, the bill recognizes retrofitted aftertreatment systems and remanufactured or new engine replacement as applicable options for funds.

Cummins also strongly supports the provisions in the bill that help bring tomorrow's technologies into the marketplace. There are many emerging technologies under development that may provide more dramatic reductions in emissions or may prove to be more cost-effective than current technologies. The bill provides a mechanism to utilize these emerging technologies on a controlled basis, providing certain conditions are met.

The Diesel Emissions Reduction Act represents a sound use of taxpayer dollars. Diesel retrofits have proven to be one of the most cost-effective emissions reductions strategies. Retrofits can provide immediate emission reductions after installation, and can be particularly important in metropolitan areas where high volumes of heavy-duty trucks and equipment are in service and/or where major construction projects are underway for long periods of time. According to EPA, the Diesel Emissions Reduction Act would leverage existing funding, and if fully utilized, could result in a reduction of approximately 70,000 tons of PM over 30 years. EPA estimates that 70 percent of those reductions come in the first 10 years of the program, and 94 percent come in the first 20 years.

The ultimate goal in environmental policy is a "win-win;" that is, a policy solution that cleans the environment and allows the economy to flourish. The Diesel Emissions Reduction Act will not only clean the air, but allow the economy to flourish by preserving and increasing domestic manufacturing jobs that produce after treatment devices, engines and other emissions reductions alternatives.

Cummins wants to congratulate Senators Voinovich and Carper on their efforts to unite our industry with the environmental community on this legislation. This legislation serves as a model for finding solutions to environmental problems. It is our hope that the process that Senators Voinovich and Carper put together to craft this legislation, can also serve to advance the use of high technology clean diesel power. With the enormous strides in emissions reductions and the dramatic fuel-efficiency benefits, clean diesel should be given serious consideration as a key com-

ponent to a national energy policy. When using ultra low sulfur diesel fuel, SUVs in 2007 have the potential to experience a fuel efficiency increase greater than 30 percent (over a gasoline-powered vehicles) and meet EPA's Tier II emissions standards.

ULTRA LOW SULFUR DIESEL FUEL IS KEY TO IT ALL

Ultra low-sulfur diesel fuel is essential to realizing the full benefits of the Diesel Emissions Reduction Act, meeting EPA's 2007 and 2010 standards and helping clean up older, non-retrofitted diesel engines.

To meet EPA's regulations and the marketplace's demands, the diesel industry has and will continue to invest billions to advance cleaner burning and more fuel-efficient engines. To achieve reductions in the existing and future fleets, we must develop highly integrated systems, which include engine and aftertreatment technologies. These technologies will result in near zero emissions by 2010. A key to enabling this new technology is ultra low-sulfur diesel (ULSD) fuel. That is, diesel fuel with a sulfur content of 15 parts per million (ppm). There has been discussion that some parties would like to alter or delay the ULSD fuel standard. The White House and EPA have assured Cummins that they are fully committed to going forward with the fuel standards and the regulations. Cummins requests that Congress make every effort to ensure these ultra low sulfur diesel standards are not compromised. Because new, high-technology diesel emissions systems rely on ultra low sulfur diesel fuel, any change in the 15 ppm standard would undo EPA's rules and severely hamper the effectiveness of the Diesel Emissions Reduction Act.

There is a strong correlation between the sulfur level in diesel fuel and PM emissions from diesel engines. All engines that use 15 ppm sulfur diesel fuel will emit less PM. For new engines produced after 2007, the 15 ppm cap fuel allows the efficient use of particulate filters reduce emissions by up to 90 percent from 2004 levels. For engines currently in service, the 15 ppm fuel reduces PM emissions immediately and allows the use of retrofit devices. Consequently, without 15 ppm fuel, the expected emissions reductions from the clean diesel engine rule are in jeopardy, and it will be even more difficult for states to achieve attainment with ambient air quality standards. Lack of 15 ppm diesel fuel would also severely hamper the effectiveness of the Diesel Emissions Reduction Act. For example, the diesel particulate filter (a popular retrofit option) used on the Washington Metropolitan Transit Authority bus, which was present at the unveiling of this legislation in June, will eliminate 90 percent of particulate matter, carbon monoxide and hydrocarbon emissions. But it requires ultra low sulfur diesel fuel for the technology to operate effectively.

In 2001, EPA published and President Bush approved an unprecedented final rule implementing clean diesel engine and fuel regulations. Those rules require engine manufacturers to invest billions of dollars to implement both PM and NOx aftertreatment technologies to achieve an overall 90 percent reduction in diesel engine emissions. As was and is recognized, those technologies and emission limits are only achievable with the corresponding requirement to reduce the sulfur content of diesel fuel to 15 ppm or less (down from 500 ppm).

During that 2001 rulemaking process, engine manufacturers argued that the sulfur content of diesel fuel should be at or near zero. However, as a compromise, engine manufacturers ultimately agreed to a 15 ppm cap. Without a maximum 15 ppm cap, engine manufacturers could not have successfully implemented aftertreatment technologies required to meet the stringent new exhaust emission levels in place for model year 2007.

There is no longer enough time to develop, test, manufacture and implement a new strategy based on increased sulfur levels in the fuel. Engine manufacturers have invested billions of dollars in new technology to meet the clean diesel engine standards, and the technologies selected are based on having 15 ppm cap sulfur fuel available. Any increase in the sulfur cap level required by the regulation will invalidate a basic assumption used by engine manufacturers and aftertreatment equipment providers in their design and development efforts to develop compliance strategies. EPA provided a long lead time to give all affected industries time to comply. Engine manufacturers have done their part by engineering and developing systems needed to meet the standards.

Recently, EPA offered a 45-day extension to the transition period to introduce ultra low sulfur diesel (from September 1, 2006 to October 15, 2006) into the market. EPA is expected to issue a direct final rule in the near future. With this extension, Cummins believes that every party involved in this rule has had more than ample time to plan and invest in complying with their portion of EPA's rule.

Cummins now looks forward to reaching 2007 so the environmental benefits of EPA's rule can be achieved.

CONCLUSION

Cummins again congratulates Senators Voinovich and Carper for their leadership on this legislation and thanks Senators Inhofe, Clinton, Jeffords, Isakson, Ombama, Lautenberg, and Alexander for their support.

Cummins strongly supports the Diesel Emissions Reduction Act of 2005. While diesels are getting cleaner and cleaner, diesels are very durable and the population that is in service today will be in use for years to come. Retrofits and re-powers can clean up these in-service diesels and provide cost effective, immediate benefits to the environment. The Diesel Emissions Reduction will support state and community efforts to achieve the new national ambient air quality standards (NAAQS) by funding cost effective retrofits and replacements that provide the greatest benefit to the environment—particularly in environmentally sensitive and areas of high populations. Ultra low-sulfur diesel is essential to realizing the full benefits of the Diesel Emissions Reduction Act and achieving enormous reductions in older and newer diesel-powered engines.

Cummins looks forward to working with you in helping older diesel engines run cleaner and ensuring the availability of ultra low sulfur diesel fuel, so that America can benefit from using clean and fuel efficient advanced diesel technologies.

STATEMENT OF CONRAD G. SCHNEIDER, ADVOCACY DIRECTOR, CLEAN AIR TASK FORCE

INTRODUCTION

Mr. Chairman, members of the subcommittee. Good afternoon. My name is Conrad Schneider, Advocacy Director of the Clean Air Task Force. CATF is a national environmental advocacy organization dedicated to restoring clean air and healthy environments through scientific research, public education; and legal advocacy. We appreciate the opportunity to testify in support of the Diesel Emissions Reductions Act of 2005. In particular, I want to commend you Mr. Chairman, for the leadership you have shown in bringing the bill to this point.

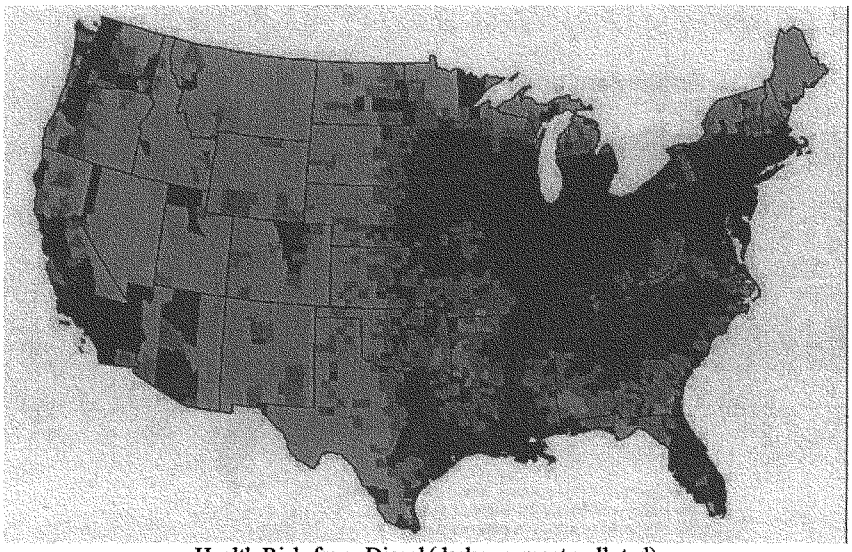
You convened a group of key stakeholders (including industry; fleet owners; local, State, and Federal Government officials; and environmental organizations) to hammer out the details of this legislation. You worked to assemble a nearly unprecedented group of cosponsors including Senators Inhofe, Jeffords, Clinton, and Isakson on this committee. Less than a week after the bill's introduction, you offered it as an amendment to the Senate Energy bill where it passed by a vote of 92 to 1. Now, you are continuing the full-court press to see if the bill can be added to the Transportation bill presently in Conference Committee.

Let's keep the momentum going on this important bill because enactment and full funding of this bill will do so much good for air quality and public health in this country.

WHY WE NEED TO CLEAN UP EXISTING DIESEL ENGINES

A. Health Effects of Diesel Exhaust

U.S. EPA, as part of its regulatory impact analyses (RIAs) for the new highway and non-road diesel engine rules found that together the rules would avoid approximately 20,000 premature deaths in the year 2030. Using EPA's Science Advisory Board-approved, methodology, that also has been reviewed and affirmed by the National Academy of Sciences (NAS), CATF contracted with EPA's own air quality consulting firm, Abt Associates, to determine the toll, in terms of adverse health effects, from diesel particles today. Abt Associates found that fine particle ($PM_{2.5}$) pollution from diesels shortens the lives of 21,000 people each year. This includes 3,000 early deaths from lung cancer. Tens of thousands of Americans suffer each year from asthma attacks (over 400,000), heart attacks (27,000), and respiratory problems associated with fine particles from diesel vehicles, equipment and vessels. These illnesses result in thousands of emergency room visits, hospitalizations, and lost work days. Together with the toll of premature deaths, the health damages from diesel fine particles will total $139 billion in 2010—3 years after EPA's new engine rules begin to phase-in. This map displays the health risk across America due to diesel fine particle pollution nationally in 1999.



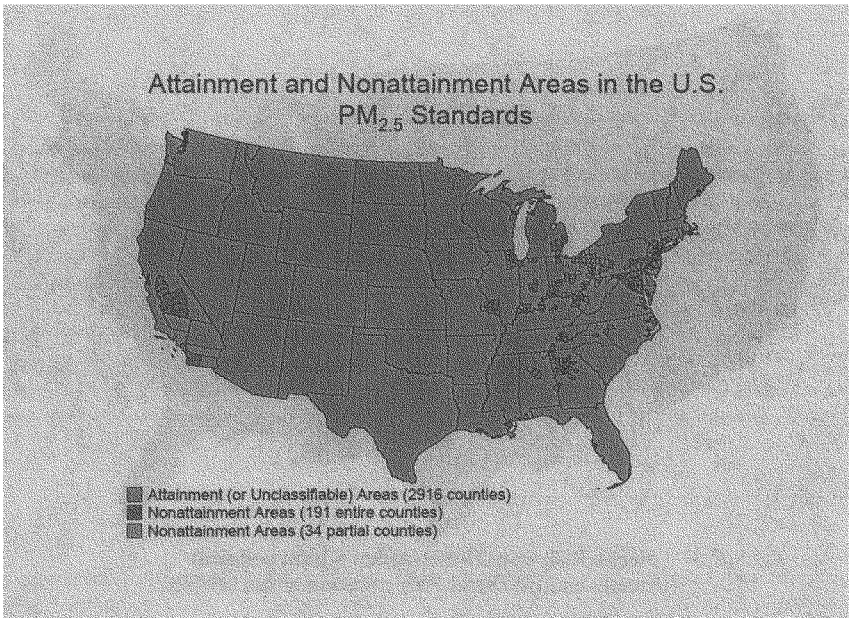
Health Risk from Diesel (darker = most polluted)
(Directly-emitted Diesel $PM_{2.5}$ concentrations (1999))

Based on CATF's analysis, nationally, diesel exhaust poses a cancer risk that is 7.5 times higher than the total cancer risk from all other air toxics combined. In the U.S. the average lifetime nationwide cancer risk due to diesel exhaust is over 35 times-greater than the level U.S. EPA considers to be "acceptable" (i.e., one cancer per million persons over 70 years of exposure.)

CATF estimates that reducing diesel fine particle emissions by 75 percent by 2020 could save a cumulative total of tens of thousands of lives beyond the projected benefits of EPA's new engine regulations. For details of CATF's diesel health report, please see: www.catf.us/goto/dieselhealth.

B. Diesel Emission Reductions will be Critical to Attainment of the $PM_{2.5}$ Standard in Many Areas

EPA, earlier this year, finalized nonattainment designations for the $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS). In all, EPA designated 225 counties where nearly one hundred million people live as failing to meet federal air quality standards for fine particles (see map).


Attainment and Nonattainment Areas in the U.S.
PM2.5 Standards
Attainment (or Unclassifiable) Areas (2916 counties)
Nonattainment Areas (191 entire counties)
Nonattainment Areas (34 partial counties)

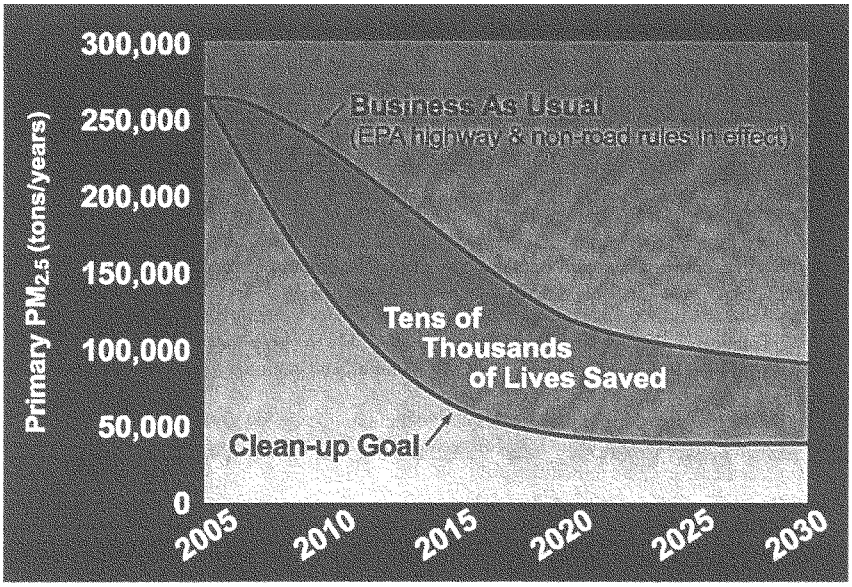
By 2010 these areas will have to implement mandatory measures to reduce $PM_{2.5}$ as part of their State Implementation Plans (SIPs) and have measured 3 years of air that meets, these standards. EPA's new engine rules will have just begun to result in their first emission reductions by that time—too late to provide much assistance to States and municipalities needing to find faster reductions for their plans due in 2007. Reductions from existing diesel engines through retrofits, rebuilds, and repowerings can provide cost-effective tons of $PM_{2.5}$ removed and help these areas achieve, timely attainment

C. Climate Impacts

Soot from diesels also has an impact on the climate. Black carbon absorbs heat in the atmosphere and is a major contributor—and potential solution—to Global Warming. Reducing diesel black carbon could provide an immediate climate benefit.

STATE DIESEL INITIATIVES—THE NEED FOR FUNDING

CATF knows that EPA's rules governing emissions from new diesel engines slated to go into effect starting in 2007 will mean significant reductions in diesel emissions over time. However, other than providing for cleaner fuel, these rules do nothing to reduce emissions from diesel engines in service today. Because of the durability of the diesel fleet, today's engines will be running for years and even decades to come. CATF's policy goal is to accelerate the benefits of EPA's new engine rules by finding ways to cut emissions from the existing diesel fleet.



CATF estimates that if we effectively steepen the curve of diesel emission reductions through retrofits, rebuilds and replacements of existing engines, and achieve a 75% reduction in emissions by 2020, tens of thousands of preventable deaths can be avoided. See graph above.

To reach this goal, CATF is working with campaigns in over a dozen States seeking State and local solutions to reduce diesel emissions. The State lead organizations and their coalition partners are pursuing reductions from the whole suite of diesel engines depending on the greatest contributors to their local air quality problems: trucks, buses, ports, trains, etc.

To cite one example, CATF is working with the Ohio Environmental Council in a stakeholder process in Columbus, OH sponsored by the Mid-Ohio Regional Planning Council (MORPC) to develop a set of recommendations on how to include diesel reductions in the area's $PM_{2.5}$ State Implementation Plan. What is, perhaps, the most critical common issue that has arisen in this process (and all the other States in which we work) is the lack of funding for retrofits. This is especially true for fleets owned by cash-strapped municipalities and States such as transit buses, school buses, and waste haulers. Currently, U.S. EPA has a paltry amount of money each year to award to fleet owners willing voluntarily to seek emissions reductions. Other small amounts of money have been available as a result of the settlement of lawsuits with the government. A handful of States have passed measures providing limited funding for diesel clean up. In California, the Carl Moyer program and in Texas the Texas Emissions Reduction Program (TERP) provide money to clean up construction equipment used in public works projects. New Jersey just this summer passed legislation funding the retrofit of a few specific public fleets. The money available, today is just a drop in the bucket of what is needed to improve public health and help areas facing nonattainment achieve healthy air standards.

HOW DERA WORKS

The Diesel Emission Reductions Act of 2005 (DERA) establishes the funding for a federal grant and loan program that will be administered through a partnership between the federal government and state governments. The amount of funding we seek is $200 million per year for 5 years, for a total of $1 billion.

All categories of diesel engines and fleets are eligible to apply for the funds including: construction, transit, school bus, ports, agricultural, and stationary engines.

All effective solutions to diesel emission reduction are eligible to compete for funds including the suite of verified retrofits, engine, rebuilds and repowerings, engine replacement, and idle reduction programs, etc.

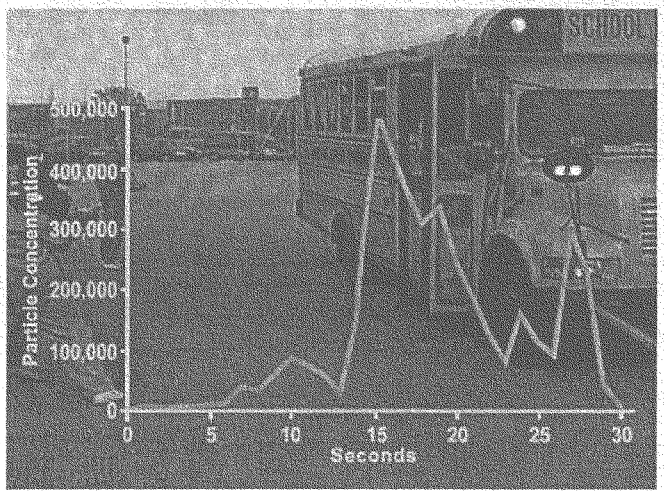
The program will have two parts, a State program that will administer 30 percent of the funds; and a national program that will be administered by U.S. EPA that will allocate 70 percent of the funds. Under the State program, states will have broad flexibility to design their own programs. DERA allocates 20 percent of funds to States to develop retrofit programs with an additional 10 percent available as an incentive for State's to match the federal dollars being provided. Each State's share will determine by combination of number of States that apply and the State's population.

The national program will allocate 70 percent of the total funds. The national program will be administered by EPA For the national program, not less than 50 percent of the funds will be awarded to publicly-owned fleets to demonstrate public-sector leadership on the issue and help cash-strapped states and municipalities reduce their fleet's emissions: Awards will be made to maximize public health benefits per dollar on the basis of competitive bids. Ranking criteria include: fleets in non-attainment areas, and Class I areas; fleets in areas with high population density; fleets in areas with disproportionate impact from the diesel fleet; and the expected life of the retrofit technology.

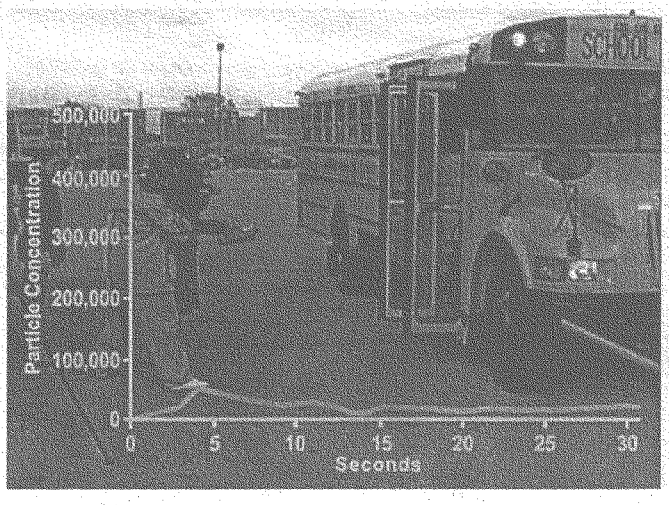
U.S. EPA estimates that this billion, dollar program would leverage an additional $500 million, resulting in a net benefit of almost $20 billion with a cumulative reduction of about 70,000 tons of particulate matter. This yields a 13 to 1 benefit-cost ratio [i.e., $20B:$1.5B=13:1].

DERA FUNDS WILL BUY TECHNOLOGY PROVEN TO VIRTUALLY ELIMINATE FINE PARTICLES EMISSIONS FROM DIESEL ENGINES

The funds awarded under DERA will go to a variety of diesel clean up projects determined through a competitive process. Any solution that proves its worth can qualify for funding. Let me describe some school bus emissions monitoring that CATF performed in conjunction with researchers at Purdue University. In Chicago, Atlanta, and Ann Arbor, Michigan, CATF measured levels of $PM_{2.5}$ inside and outside school buses following actual bus routes. In the photograph, researchers equipped with monitors are measuring $PM_{2.5}$ levels at the curbside as a school bus pulls away after children are dropped off.



As you can see from the image above, the monitoring instrument recorded high particle levels as the conventional bus running on conventional fuel departed.



In the next image, above, when the bus was retrofitted with a diesel particulate filter and run on the Ultra Low Sulfur Diesel fuel that will be available nationwide next year, the same particle emissions were *virtually eliminated.* This type of filter costs about $5,000 per bus. This provides one real-world example of what the money in the DERA bill will do. It can fund retrofits that can reduce diesel $PM_{2.5}$ from vehicles such as this by up to 90 percent.

CONCLUSION

In summary, CATF enthusiastically supports full funding and enactment of the Diesel Emission Reductions Act of 2005. We believe it will, make a significant contribution towards improving the nation's air quality. Thank you for your commitment to this important matter. I would be happy to answer any questions you may have.

STATEMENT OF TIMOTHY J. REGAN, PRESIDENT, EMISSIONS CONTROL TECHNOLOGY ASSOCIATION

INTRODUCTION

Mr. Chairman, my name is Tim Regan. I'm the President of the Emissions Control Technology Association ("ECTA"). I'm here to thank you for taking the leadership on the diesel retrofit issues.

ECTA represents the companies that have been at the cutting edge of mobile source emissions control technology for three and a half decades. Our members invented and developed the core, specifically the substrate and the catalyst, of the catalytic converter.

They call our technology "aftertreatment" because it performs a chemical conversion or a filtering function to the emissions produced by the engine. In essence, the technology acts like a small chemical plant that neutralizes the nitrogen oxide ("NOx"), carbon monoxide ("CO"), and hydrocarbons ("HC") in gasoline exhaust. In the case of diesel ingines, it goes one step further by burning the fine particulate matter ("$PM_{2.5}$").

Our technology has had a profound positive impact on the environment both here and abroad. Since 1975, the catalytic converter has removed 1.5 billion ton of pollution from American skies and 3 billion tons worldwide.[1] As the catalytic converter is the precursor to diesel retrofits technology, we are confident that similar profound results will be generated by the deployment of diesel retrofits.

In light of this confidence, we strongly support S. 1265,the Diesel Emissions Reduction Act of 2005. It will accelerate deployment of diesel retrofit technology, which is good for human health and good for the economy. Obviosly, these are 2 compelling reasons to support your bill.

Before I explain why we believe this to be the case, I'd like to tell you a little bit about our industry and our technology.

INDUSTRY AND TECHNOLOGY

Your bill will accelerate the deployment of diesel emissions reduction technology on public fleets throughout the Nation. This technology covers engine rebuild, engine replacement, and exhaust aftertreatment, which is commonly referred to as diesel retrofits. My discussion today will focus on the diesel retrofit technology developed and produced by ECTA's members.

Diesel retrofit technology involves several levels of development and manufacture. First, a substrate material must be developed and manufactured to provide the foundation for the catalyst and to impart filtration. This substrate can consist of either a ceramic or a metal material. It can be used for a diesel oxidation catalyst ("DOC"), a diesel participate filter ("DPF"), and a lean-NOx catalysts ("LNC") which can all be applied to diesel engines.

At a second level, the substrates are frequently coated by a catalyst manufacturer with a high-surface area material onto which a catalytic material is applied. These catalysts, combined with the exhaust heat absorbed by the substrate create a chemical reaction. In a diesel application, this chemical reaction converts harmful carbon monoxide, hydrocarbons, and particulate matter into harmless water and carbon dioxide. In the case of LNC, the chemical reaction converts nitrogen oxides to nitrogen and oxygen.

A DOC performs a catalytic reaction similar to that of an automotive catalytic converter. It is the most cost-effective diesel retrofit technology for removing up to 90 percent of the carbon monoxide, 60 percent to 90 percent of the hydrocarbons,

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[1] *See* Corning Press Release citing the Manufacturers of Emission Control Association ("MECA") (February 15, 2005), "http:www.corning.com/environmentaltechnologies/mediacenter/press-releases/2005021501.aspx.

and 20 percent to 50 percent of the particulate matter from diesel exhaust.[2] It costs approximately $400 to $1,000 per device depending on the application.[3]

A DPF is either coated with the catalytic material or not coated depending on the application. It is composed of a porous material which filters over 90 percent of the fine particulate matter from the diesel exhaust.[4] Diesel pariculate matter takes the form of solid carbon particles and unspent fuel and lube oil. The DPF can be regenerated using the heat from the exhaust or auxiliary heat to burn the trapped particulates. If it is coated with the catalytic material, it also reduces carbon monoxide and hydrocarbons. Although more expensive than a DOC, a diesel particulate filter is very cost-effective because it addresses the primary threat to human health in diesel exhaust. It costs approximately $7,500 per device.[5]

Diesel retrofit technologies are elegant from an engineering point of view because they are passive in nature and require little, if any, maintenance. They occasionally need to be cleaned of ash that comes from the lube oil. These devices have been demonstrated to last over 450,000 miles on some retrofit applications.

At a third level, the diesel oxidization and the diesel particulate filter are secured in a metal canister which provides protection and durability. The canister is installed on the exhaust system of a diesel vehicle.

Diesel particulate filter systems will be required equipment under the EPA's 2007 Heavy Duty Diesel Rule ("2007 Rule") for on-road heavy duty vehicles produced in model year 2007 and beyond. Under regulation that will go into effect beginning in 2010, devices which are currently in development in our industry will reduce nitrogen oxide from diesel exhaust by more than 90 percent from today's levels. These include nitrogen oxide traps, selective catalytic reduction, and other technologies.

Now I'd like to turn my attention to the reasons why we support your legislation.

CLEAN AIR AND HEALTH IMPACT

Unfortunately, diesel engines have received a "bad rap". As they say, "my daddy's dirty diesel". This may have been true 10 years ago because diesel engines produced comparatively higher levels of PM and NOx than gasoline-powered vehicles. Substantial progress has been made in reducing diesel emissions over the last decade. Diesel engines manufactured today emit 83 percent less particulate matter and 63 percent less nitrogen oxide than they did in 1988.[5]

This is not to say that additional improvement cannot be made in diesel emissions. The new 2007 Diesel Rule will require even farther reduction of particulate matter and nitrogen oxides. These new regulations will reduce both PM and NOx emission by 98 percent from their 1988 levels.[6]

These air quality improvements can significantly enhance human health. We measure these health effects by estimating the economic welfare associated with reduced levels of sickness and mortality risk arising from improved air quality. Studies have been done that estimate the health cost of diesel and other mobile source emissions.

These estimates are extremely complex because they require estimating emissions generated by motor vehicles, estimating human exposure to air pollutants, relating these changes to physical health effects, and relating these health effects to changes in economic welfare. Essentially, we must estimate the value of illness and mortality risk.

While the absolute levels of these estimates are clearly open to challenge, there is a broad consensus that diesel emissions cause or aggravate respiratory problems and chronic bronchial conditions such as asthma. In diesel exhaust, particulate matter measured below the 2.5 micron level is particularly troublesome as a matter of human health. As indicated in Figure 1, the health effects of $PM_{2.5}$ have been measured as high as $109,000 per ton compared to $11,332 per ton for NOx, $718 per ton for volatile organic compounds, and $50 per ton for carbon monoxide. In other words, $PM_{2.5}$ is over 2000 times more harmful than carbon monoxide.

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[2] See Diesel Technology Forum, "Cleaner Air, Better Performance: Strategies for Upgrading and Modernizing Diesel Engines" (May 2003) <http://www.dieselforum.org/whitepaper/downloads/retrofit.pdf>, Figure 4, pg. 5.

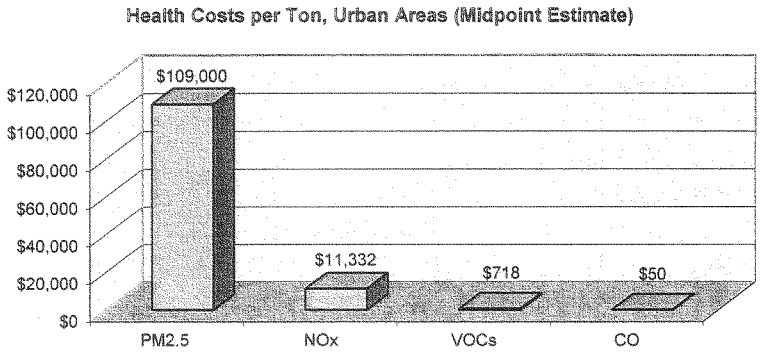
[3] *See* Manufactures of Emission Control Association ("MECA"), "Retrofitting Emission Controls on Diesel-Powered Vehicles" (March 2002). <http://www.meca.org/jahia/Jahia/engineName/filemanger/pid/229/dieselretrofitwp.pdf?actionreq=actionFileDownload&fileItem=220>.

[4] *See supra footnote 2.*

[5] *See supra footnote 2, p. 1.*

[6] *Id.*

Figure 1



Source: McCubbin, Donald and Mark Delucchi, Journal of Transport Economics and Policy, "The Health Costs of Motor-Vehicle-Related Air Pollution" (September 1999).

Using these tools, EPA has estimated the health benefits of diesel emission reduction technology to be quite significant. For example, EPA estimates that the 2007 Rule will generate $66 billion in health benefits annually when the new vehicles have significantly penetrated the fleet after the year 2020.[7] This equates to about one half of one percent of the entore U.S. economy in 2005. This is pretty significant when you consider the fact that a three percentage point growth in the economy is believed to be quite robust.

These health effects are generated under the 2007 Rule by the deployment of diesel emission technology en new vehicles. The Rule does nothing to reduce emissions from the existing 11 million diesel-powered vehicles on the road today.[8] Because diesels are so durable, existing vehicles in the fleet will not be fully replaced until 2030.[9] Hence, the need for diesel retrofits to reduce emissions on in-use vehicles during the balance of their useful life. The accelerated deployment of this technology on existing vehicles as authorized by S. 1265 will realize tremendous health benefits in the short and medium term.

This reality is starkly reflected in the President's FY06 budget proposal for a new Clean Diesel Initiative to finance demonstration projects for diesel retrofit technology. This small investment is estimated in the President's budget to generate $360 million in health benefits.[10] We hope the Congress will appropriate the funds for this new program.

Most importantly, significant health benefits will be generated from the fill implementation and funding of S. 1265. As the committee is well aware, EPA estimates that $1.5 billion investment in diesel retrofits generated by S. 1265 will reduce diesel particulate matter pollution by 70,000 tons and generate over $20 billion in health benefits.[11]

It is particularly important that we capture these benefits today because so much of the Nation is currently exceeding National air quality standards for $PM_{2.5}$ as well as other criteria pollutants. EPA estimates that nearly 100 million people in the country reside in non-attainment areas for fine particulate matter.[12] Since mobile source emissions account for 15 percent of all fine particulate matter pollution in the country and such pollution is deemed most threatening of the criteria pollutions,[13] the accelerated deployment of diesel retrofit technology will contribute significantly toward achieving attainment and enhancing human health.

ECONOMIC IMPACT

In addition to the important health effects associated with S. 1265, the bill also will have a very positive impact on the economy in several ways. First, it will accelerate deployment of diesel retrofit technology which has proven to be a very cost-effective means for achieving air quality improvement.

As indicated in Figure 2, we estimate that diesel retrofit technology is one of the most cost-effective means for improving air quality compared to other methods used under our interstate highway transportation statutes.

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[7] *See* Environmental Protection Agency, (July 7, 2005) "2007 Heavy-Duty Highway Final Rule"<http://www.epa.gov/OMSWWW/diesel.htm>

[8] See Senator Voinovich Press Release (June 16, 2005) http://voinovich.senate.gov/news—center/record.cfm?id=238996&>

[9] *Id.*

[10] See Environmental Protection Agency, "The Budget for Fiscal Year for 2006", pg. 289.

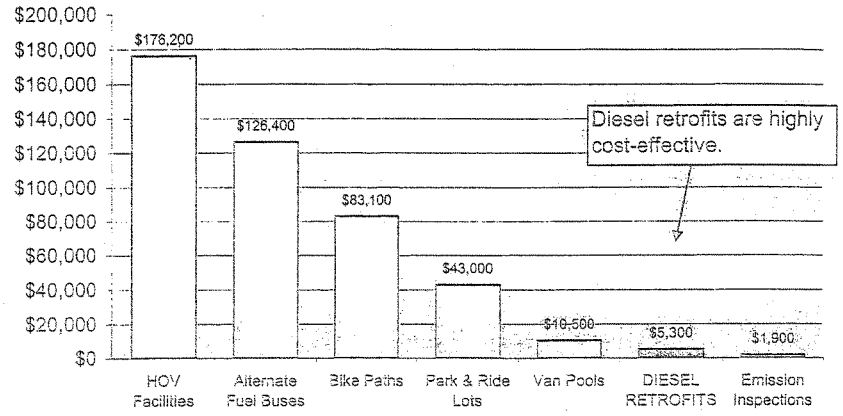
[11] *See supra footnote 8.*

[12] *See* Environmental Protection Agency, AirData (November 2004) http://www.epa.gov/air/data/nonat.html?us~usa~United%20States.

[13] *See* Transportation Research Board of the National Academies' National Research Council, (April 2002) "The Congestion Mitigation and Air Quality Improvement Program: Assessing 10 Years of Experience", Figure 2-1, pg. 44.

Figure 2

Median Cost per Ton Equivalent of Air Pollution Removed



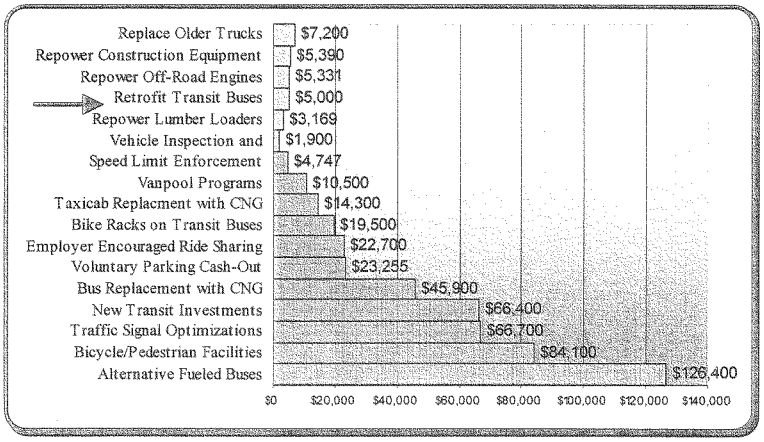
Source: Robert F. Wescott, "Cleaning the Air: Comparing the Cost Effectiveness of Diesel Retrofits vs. Current CMAQ Projects", (May 11, 2005).

These estimates show that diesel retrofits cost at most a mere $5,300 per ton of pollution reduction compared to a mid-point estimate of $126,400 for an alternative fuel bus. Only emission inspection and maintenance at a mid-point estimate of $1,900 per ton beats diesel retrofits. The analysis that supports these estimates is attached as Exhibit 1 for the committee's convenience.

As indicated in Figure 3, our estimates are verified by analysis done by the Diesel Technology Forum which estimates diesel retrofits at about $5,000 per ton of emission reduction.

Figure 3

Dollars per Ton of NOx Reduction



Source: Diesel Technology Forum, "Cleaner Air, Better Performance: Strategies for Upgrading and Modernizing Diesel Engines"(May 2003)<http://www.dieselforum.org/whitepaper/downloads/retrofit.pdf>.

The second economic benefit associated with the deployment of diesel retrofits is reflected by the extremely favorable cost benefit associated with investment. As indicated, the President's budget proposal reflects a $360 million return on a $15 million investment under the new Clean Diesel Initiative.[14] This is a 24 to 1 benefit-cost ratio. As the members of the committee are well aware, EPA further estimates that the cost-benefits ratio for S. 1265 is 13 to 1.[15]

The third economic benefit is the investment that has been, generated by the members of the Emissions Control Technology Association and others in the industry. It is estimated that our industry is investing over $1.8 billion to optimize and commercialize advanced diesel emission technologies to meet the requirements of existing EPA regulations and retrofits.[16]

This investment will generate good-paying manufacturing jobs in the United States. For example, Corning Incorporated, a leading manufacturer of ceramic substrates for diesel oxidization catalysts and diesel particulate filters, plans to invest over $350 million in research, development, and manufacturing and to generate ever 300 new high-paying jobs in manufacturing.[17] This is important job creation in Western New York that is sorely in need of new economic growth.

Finally, new diesel emissions reduction technology generates growth through exports. The United States leads the world in mobile source emission reduction technology. As such, we are exporting catalytic converters, diesel oxidization catalysts and diesel particulate filters around the world, including China.

CONCLUSION

Mr. Chairman, in closing, I'd like to congratulate you again on your leadership. The prompt enactment and funding of S. 1265 is good for human health and good for the economy for all the reasons that I have described. On behalf of the ECTA members, I can assure you that we will do everything in our power to help achieve enactment and funding.

[14] *See supra footnote 11.*

[15] *See supra footnote 8.*

[16] See MECA press release, (March 16, 2004), "Motor Vehicle Emission Controls Industry Continues to Make Necessary Investments to help meet EPA's 2007 and Later On-Road HDDE Standards".

[17] Interviews with Corning executives.

ILLUSTRATION 1

Substrate for Diesel Particulate Filter

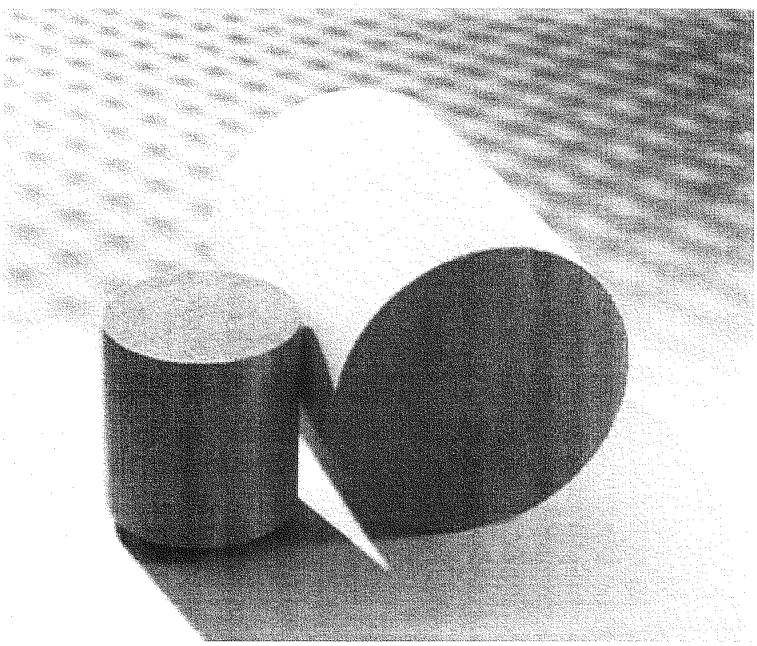


ILLUSTRATION 2

Substrate for Diesel Oxidation Catalyst

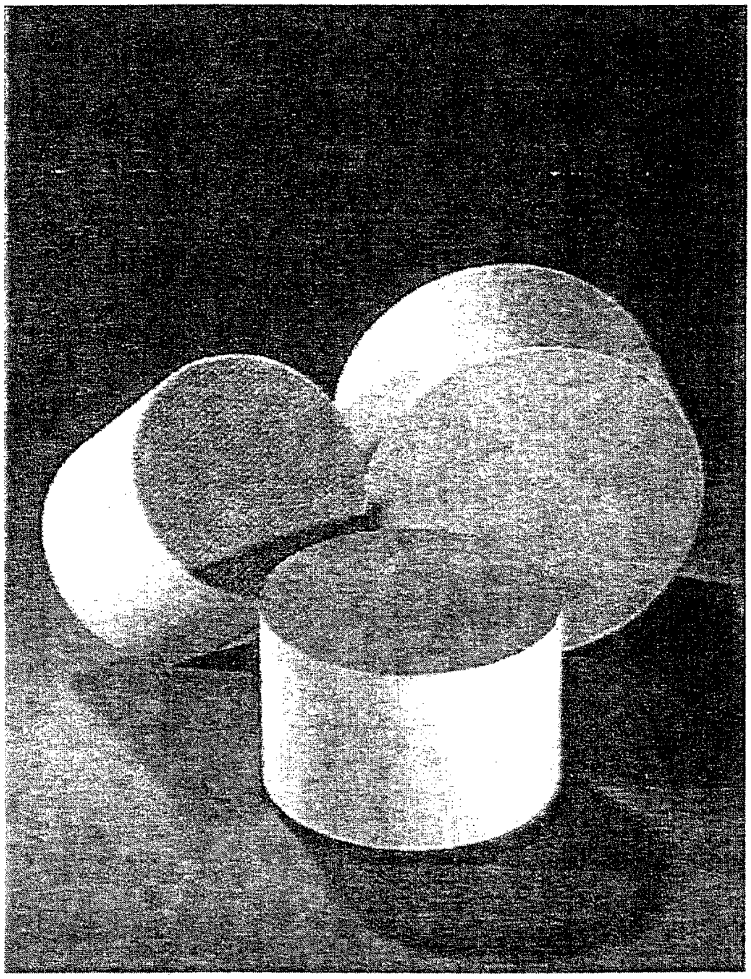


ILLUSTRATION 3

One day's soot from bus *without* filter

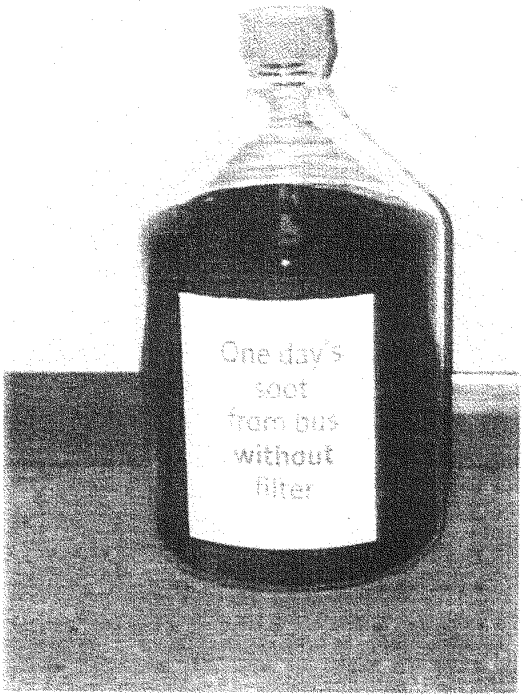
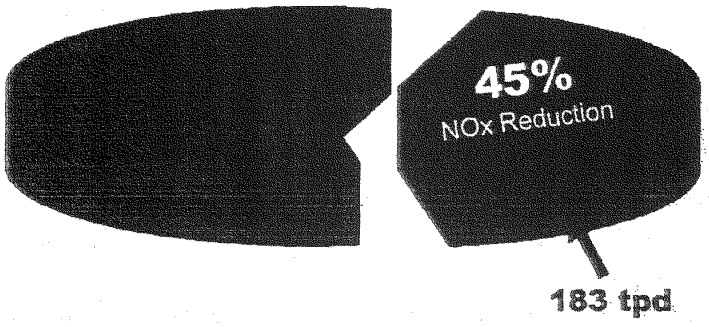


Exhibit 1

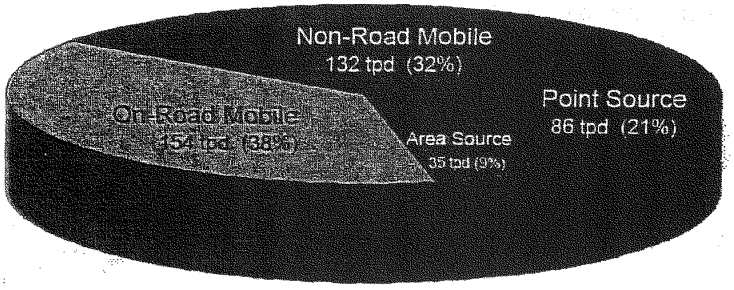
2010 Emissions Inventory

D/FW NOx Reductions Needed



2010 Emissions Inventory

Dallas/Fort Worth NOx



AN ANALYSIS PREPARED FOR THE EMISSION CONTROL TECHNOLOGY ASSOCIATION BY ROBERT F. WESTCOTT, PH.D., ECONOMIC CONSULTANT, WASHINGTON, DC

CLEANING THE AIR: COMPARING THE COST EFFECTIVENESS OF DIESEL RETROFITS VS. CURRENT CMAQ PROJECTS

EXIBIT 1

EXECUTIVE SUMMARY

- A key goal of U.S. air pollution programs, including the Congestion Mitigation and Air Quality (CMAQ) program created in 1990, has been to clean the air in cities to improve public health and lower medical costs. But while the CMAQ program has emphasized reductions of carbon monoxide, hydrocarbons, and ozone, recent research finds that the top air pollution problem in urban areas today is fine particulate matter, which is particles with a diameter of 2.5 micrometers or less ($PM_{2.5}$).
- This pollutant, $PM_{2.5}$, is a primary airborne threat to human health today costing more than $100,000 per ton in health costs. Researchers estimate that $PM_{2.5}$ is 2 to 25 times as harmful to human health as nitrous oxide, more than 100 times as dangerous as ozone, and 2000 times as dangerous as carbon monoxide on a per ton basis.
- Diesel engine exhaust is a source of $PM_{2.5}$ emissions in urban areas. Approximately one third of these diesel emissions are due to on-road vehicles and about two thirds are due to off-road equipment, such as construction equipment.
- Diesel retrofit technology is currently available that is highly effective at reducing $PM_{2.5}$ emissions. Diesel oxidation catalysts (DOCs) are well suited for retrofitting older off-road vehicles and diesel particulate filters (DPFs) are highly efficient at reducing these pollutants where new low sulfur diesel fuels are available, as is already the case in most urban areas.
- From the point of view of cost effectiveness, diesel retrofits are superior to almost all current CMAQ strategies, including ride-share programs, van-pool arrangements, HOV lanes, traffic signalization, bike paths, and all strategies that attempt to modify behavior (like encouraging telecommuting.) Most of these CMAQ strategies cost $20,000 to $100,000 per ton equivalent of pollutant removed, and some cost as much as $250,000 per ton removed.
- Under conservative assumptions, diesel retrofits cost only $5,340 per ton equivalent of pollutant removed. In fact, among all CMAQ strategies, only emission inspection programs appear to exceed the cost effectiveness of diesel retrofits.
- Expanding the range of CMAQ projects to include diesel retrofits for construction equipment and off-road machinery in urban areas could be a highly effective way to spend public monies. More than 100 million Americans live in areas of the country where $PM_{2.5}$ levels exceed the EPA's guidelines.

BACKGROUND

Cleaning the air to improve human health and lower medical costs has been an objective of U.S. government policy since at least the Clean Air Act of 1970. Concerns about poor air quality, especially in urban areas, led to the creation of the Congestion Mitigation and Air Quality (CMAQ) Program in 1990, which has set aside a portion of transportation monies for the past 15 years to fond innovative projects to reduce carbon monoxide, hydrocarbons, nitrous oxides, and smog in so-called non-attainment areas.[18] Vehicle emission inspection programs, high-occupancy vehicle (HOV) travel lanes, van pool programs, park-and-ride lots, and bike paths are examples of CMAQ projects.

There has been significant progress in the past 35 years in reducing carbon monoxide and hydrocarbon emissions and smog. Scientists, however, have been able to identify new airborne health risks whose costs are now becoming more fully appreciated. Notably, particulate matter (PM) has been found to have especially pernicious health effects in urban areas. Increasingly it is becoming understood that diesel engine emissions in urban areas, both from on-road trucks and buses and from off-road construction and ether equipment, are a significant source of fine particuiate matter pollution. This leads to a number of questions:

- What is the current assessment of the top health risks from air pollution from mobile sources in urban areas?
- What is the role of emissions from diesel engines?

[18] The EPA has formal criteria for the definition of non-attainment areas, but generally these are the large U.S. cities.

- How does diesel retrofit technology to clean engine emissions after combustion compare with current CMAQ projects in terms of cost effectiveness?
- Are CMAQ funds currently being deployed in the most cost-effective manner possible?

This paper examines these questions by reviewing the recent scientific, environmental, economic, and health policy literature.

THE HEALTH COSTS OF AIR POLLUTION

In the 1960s and 1970s the key health risks from air pollution were deemed to come from carbon monoxide, hydrocarbons (or volatile organic compounds, VOCs), nitrous oxides (NOx), and smog, and early clean air legislation naturally targeted these pollutants.[19] During the past 10 years or so, however, researchers have identified new pollutants from mobile sources that have particularly harmful health effects, especially in urban areas. Top concern today centers around particulate matter, and especially on fine particulate matter. Fine particulates, with a diameter of less than 2.5 micrometers ($PM_{2.5}$), can get trapped in the lungs and can cause a variety of respiratory ailments similar to those caused by coal dust in coal miners. A significant portion of $PM_{2.5}$ emissions in urban areas come from off-road diesel equipment. According to analysis by the California Air Resources Board, on-road engines account for about 27 percent of PM emissions in California and off-road equipment is responsible for about 66 percent of PM emission.[20]

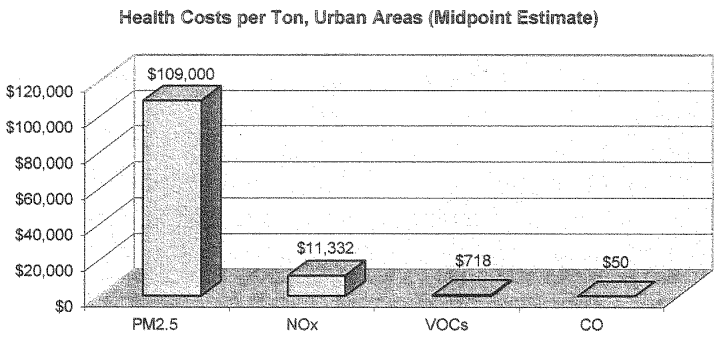
Analysis by Donald McCubbin and Mark Delucchi published in the Journal of Transport Economics and Policy evaluates the health costs of a kilogram of various air pollutants, including CO, NOx, $PM_{2.5}$, sulfur oxides (SOx), and VOCs.[21] These researchers estimate health costs from such factors as, hospitalization, chronic illness, asthma attacks, and loss work days for the U.S. as a whole, for urban areas, and for the Los Angeles basin. For urban areas, they find the range of health costs per kilogram of CO was from $0.01 to $0.10, NOx was from $1.59 to $23.34, $PM_{2.5}$ was from $14.81 to $225.36, SOx was from $9.62 to $90.94, and VOCs was from $0.13 to $1.45. Taking the mid-points of these estimates, a kilogram of $PM_{2.5}$ therefore was nearly 10 times more costly from a health point of view than a kilogram of NOx, more than 150 times more costly than a kilogram of VOCs, and more than 2000 times more costly than a kilogram of CO. On a per ton basis, a ton of $PM_{2.5}$ causes $109,000 of health costs, a ton of NOx costs $11,332, a ton of VOCs costs $718, and a ton of CO costs $50 (Chart 1).

[19] Catalytic converters installed on all cars since the mid 1970's, for example, have targeted these pollutants.

[20] *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles,* California EPA Air Resources Board, October 2000, p. 1.

[21] McCubbin, Donald and Mark Delucchi (1999), The Health Costs of Motor-Vehicle-Related Air Pollution, *Journal of Transport Economics and Policy,* September, Vol. 33, pp. 253-86.

Chart 1



Source: McCubbin and Delucchi (1999)

EFFECTIVENESS OF DIESEL RETROFIT FILTERS

Given the high health costs of $PM_{2.5}$ significant effort has gone into the development of technological solutions to deal with the problem. The best technologies involve the use of post-combustion filters with a catalyzing agent, which together trap and break down dangerous pollutants before they are emitted into the air. All new diesel tracks will be required to use these technologies by 2007 according to U.S. EPA rales, and off-read equipment will have to use these technologies by 2010. (Rules require 95 percent reductions in emissions of several pollutants, as well as a 97 percent cut in the sulfur levels in diesel fuel.)[22] However, given that the lifespan of a diesel engine can be 20-30 years, it will take decades to completely turn over America's diesel fleet. Therefore, by lowering emissions from older diesels, retrofits are an effective path to cleaner air over the next few decades.

Diesel retrofit filters are highly effective at their chief function: preventing dangerous pollutants from ever entering the air. Diesel oxidation catalysts (DOCs), at $1,000 to $1,200 per retrofit, reduce PM by about 30 percent and can work with current higher sulfur diesel fuels. This yields a large benefit when installed on older, higher-polluting vehicles. In addition to their PM reducing capabilities, these filters also can cut the emission of carbon monoxide and volatile hydrocarbons by more than 70 percent.

Diesel particulate filters (DPFs), which generally cost $4,000-$7,000 per engine, are far more efficient. They are specifically targeted at keeping more dangerous PM out of the air than are DOCs. In fact, they can reduce $PM_{2.5}$ pollution from each vehicle by more than 90 percent, yielding an enormous cut in emissions over the life of the diesel engine, even, when installed on newer, cleaner diesel vehicles. An additional requirement of DPFs, however, is that the vehicle must run on newer very low sulfur fuels. High sulfur fuel leads to sulfate emissions from the filter due to the very active catalysts needed to make the filters function properly. Thus, DPFs are most effective as a solution for vehicles in urban areas—such as construction equipment and urban fleets—where very low sulfur fuels are already available.[23]

These technologies are not new or experimental; they are already in use around the world. There are two million of these technologies already at work in heavy-duty diesel vehicles worldwide. Further, there are 36 million DOCs and 2 million DPFs in use on passenger vehicles in Europe alone, where these technologies are currently being used, reaping cost-effective health benefits over the long term.

THE CMAQ PROGRAM

The CMAQ program is the only federally funded transportation program chiefly aimed at reducing air pollution.[24] Its historical purpose has been twofold: to reduce traffic congestion and to fund programs that clean up the air Americans breath. Within its air quality mission, it is designed primarily to help non-attainment areas (mainly polluted urban zones) reach attainment for air quality standards under the Clean Air Act.[25] Historically many CMAQ projects have tried to change travel and traffic behavior in order to achieve its goals. These transportation control measures (TCMs) have been designed both to reduce traffic congestion as well as improve air quality. An example is a bicycle path. Designed to reduce the number of drivers on the road, bike paths could, in theory, achieve both goals. Further examples are vanpools, ridesharing and park and ride programs, and HOV lanes: all current CMAQ projects. Other projects have addressed emission reductions directly, as for example, through funding for state automobile emission inspection programs.

As a condition for reauthorizing the CMAQ program in 1998, the U.S. Congress required that a detailed 10-year assessment of the program be conducted. This review was performed by the Transportation Research Board of the National Research Council and was completed in 2002. This review found that CMAQ has been less than successful in reducing congestion and suggested that the most beneficial way for CMAQ to use its funds is to focus on air quality.[26] It also found that TCMs were less cost-effective than measures to directly reduce emissions, such as through inspection programs.

Furthermore, the study suggested that CMAQ's focus within the domain of air quality is misplaced. CMAQ programs have targeted the gases considered the most

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[22] "EPA Dramatically Reduces Pollution from Heavy-Duty Trucks and Buses, Cuts Sulfur Levels in Diesel Fuel," Environmental News, EPA, 12/21/00.

[23] Very low sulfur diesel fuel will be available nationwide by 2006.

[24] Transportation Research Board of the National Research Council: *The Congestion Mitigation and Air Quality Improvement Program: Assessing 10 Years of Expweience (2002) p. 1.*

[25] ibid, p. 1.

[26] ibid, p. 13

dangerous pollutants for many years, like hydrocarbons, carbon monoxide, and nitrous oxides. While these gases pose recognized health and environmental risks, recent work has shown that the dangers of these substances pale in comparison to the danger of fine particulate matter.[27] In the words of the study, "Much remains to be done to reduce diesel emissions, especially particulates, and this could well become a more important focus area for the CMAQ program."[28] Further, discussing the fact that diesel-related CMAQ programs could be the most cost-effective, the study states, "had data been available on particulate reductions—the ranking of strategies focused on particulate emissions—would likely have shown more promising cost-effectiveness results."[29]

COMPARING THE COST EFFECTIVENESS OF DIESEL RETROFITS WITH OTHER CMAQ PROJECTS

Given that $PM_{2.5}$ emissions from diesel engines are a leading health concern, that effective technology exists today to clean the emissions of off-road diesel equipment used extensively in the middle of American cities (non-attainment areas), and that the CMAQ 10-year review highlights the possible use of CMAQ funds for diesel retrofit projects, it is logical to compare the cost effectiveness these diesel retrofits with current CMAQ projects. The CMAQ Program: Assessing 10 Years Experience (2002) estimates the median cost per ton of pollutant removed for 19 different CMAQ strategies and these estimates provide the comparison base. Published estimates for diesel retrofits are compared with these estimates.

As a first step in comparing the cost effectiveness of pollution reduction strategies, it must be noted that the CMAQ cost effectiveness estimates are presented as "cost per ton equivalent removed from air," with weights of 1 for VOCs, 4 for NOx, but 0 for $PM_{2.5}$.[30] Relying upon the McCubbin and Delucchi health cost estimates, however, even weighted NOx should be considered mere damaging than VOCs. That is, even though 0.25 ton (the 1:4 ratio above) of NOx removed counts as the CMAQ equivalent of one ton pollution removed, it has a higher health cost than a ton of VOCs ($11,332/4 = $2,883 for NOx vs. $718 for VOCs). As a second step, conservatively assume that all CMAQ projects remove the more damaging pollutant (NOx). This still means that a ton of $PM_{2.5}$ reduction would be worth at least 9.45 tons of regular CMAQ reductions ($109,000 for $PM_{2.5}$/$11,332 for NOx).

Diesel retrofits are estimated to cost $50,460 per ton of $PM_{2.5}$ removed by the California Air Resources Board (CARB).[31] This estimate is very conservative and substantially higher than that cited by industry sources. Using the CARB cost estimate, diesel retrofits cost $5,340 per ton equivalent of air pollution removed ($50,460/9.45), based upon the CMAQ definition of ton equivalent and on the conservative assumption that CMAQ projects remove the most damaging pollutant reviewed. If a less conservative and more realistic assumption is used—that CMAQ projects remove a mix of NOx and VOCs—then the cost-effectiveness of diesel retrofits becomes substantially more favorable, and could be as low as $332 per ton of CMAQ pollutant removed.

This analysis means that diesel retrofits for construction equipment are highly cost-effective when compared with current CMAQ strategies. As shown in Table 1 and Chart 2, some CMAQ strategies cost more than $250,000 per ton of pollutant removed (teleworking), and many are in the $20,000 to $100,000 per ton range (traffic signalization, park and ride lots, bike paths, new vehicles, etc.). The only current CMAQ project category that exceeds the cost effectiveness of diesel retrofits is emission inspection programs.

Other studies also conclude that diesel retrofits are highly cost-effective compared with current CMAQ projects. The Diesel Technology Forum compared the benefits and costs of CMAQ projects with diesel retrofits for transit buses (for NOx pollution reduction) and concluded that retrofits are a better use for CMAQ funds than any other typical CMAQ project, with the exception of inspection and maintenance pro-

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[27] ibid p. 13.
[28] ibid p. 74
[29] ibid p. 131
[30] Importantly, the study's $PM_{2.5}$ weight of 0 does not reflect $PM_{2.5}$'s health costs, but rather that fact that standards have not yet been set for it by the U.S. EPA. As the CMAQ 10-year review says, "$PM_{2.5}$ is generally regarded as the pollutant with the most pernicious health consequences, though to date standards have not been promulgated for its regulation for both measurement and economic reasons." (p. 295).
[31] California Air Resources Board, "Staff Analysis of PM Emission Reductions and Cost-Effectiveness," Sept. 6, 2002.

grams and speed limit enforcement.[32] Also, the California EPA's Air Resources Board has estimated that diesel retrofits have a benefit of between $10 and $20 for each $1 of cost.[33] The U.S. EPA, in its justification for new on-road diesel rules in 2007 and off-road rates in 2010 estimates the benefits for diesel particulate filters at roughly $24 for each $1 of cost.[34]

[32] "The Benefits of Diesel Retrofits," Diesel Technology Forum. See http://dieselforum.org/retrofit/why—ben.html.

[33] "Perspectives on California's Diesel Retrofit Program," California EPA, Air Resources Board, presentation by C. Witherspoon, June 3, 2004.

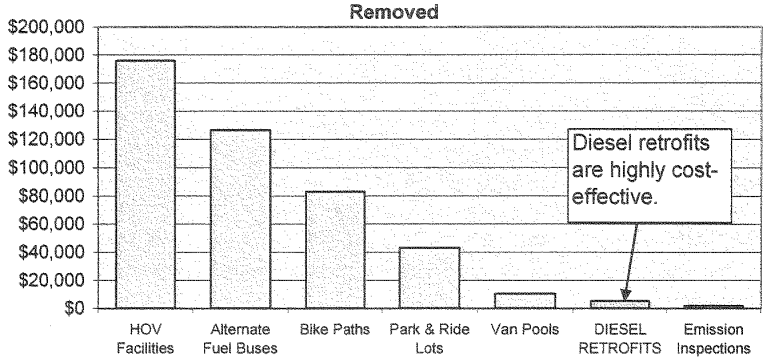
[34] See, for example, "2007 Heavy-Duty Highway Final Rule," U.S. EPA, May 2000, which can be found at http://www.epa.gov/otaq/deisel.htm.

Table 1: Cost-Effectiveness of Current CMAQ Strategies And Diesel Retrofits (Median cost per ton equivalent of air pollution removed)

	Median Cost	Rank
Inspection and Maintenance	$1,900	1
DIESEL RETROFITS	$5,340	2
Regional Rideshares	$7,400	3
Charges and Fees	$10,300	4
Van Pool Programs	$10,500	5
Misc. Travel Demand Management	$12,500	6
Conventional Fuel Bus Replacement	$16,100	7
Alternative Fuel Vehicles	$17,800	8
Traffic Signalization	$20,100	9
Employer Trip Reduction	$22,700	10
Conventional Service Upgrades	$24,600	11
Park and Ride Lots	$43,000	12
Modal Subsidies and Vouchers	$46,600	13
New Transit Capital Systems/Vehicles	$66,400	14
Bike/Pedestrian	$84,100	15
Shuttles/Feeders/Paratransit	$87,500	16
Freeway Management	$102,400	17
Alternative Fuel Buses	$126,400	18
HOV Facilities	$176,200	19
Telework	$251,800	20

Source: All costs from *The CMAQ Improvement Program: Assessing 10 Years of Experience, (2002),* except diesel retrofit costs, which are from author's calculations.

Chart 2: Median Cost per Ton Equivalent of Air Pollution Removed



CONCLUSIONS

The top air pollution problem in U.S. urban areas today is almost certainly $PM_{2.5}$, which is estimated to cost more than $100,000 per ton in health costs. A major source of $PM_{2.5}$ emissions in urban areas is diesel engine exhaust. Approximately one third of these diesel emissions are due to on-road vehicles and about two-thirds are due to off-road equipment. Off-road equipment in urban areas is a particular problem, because it gives off exhaust at ground level, frequently near large groups of people.

Diesel retrofit technology is currently available that is highly effective at reducing $PM_{2.5}$ emissions. DOCs are well suited for retrofitting older off-road vehicles and DPFs are highly efficient at reducing these pollutants where new low sulfur diesel fuels are available, as is already the case in most urban areas.

From a cost effectiveness point of view, diesel retrofits are superior to almost all current CMAQ strategies, including ride-share programs, van-pool arrangements, HOV lanes, traffic signalization, bike paths, and all strategies that attempt to modify behavior (like encouraging teleworking.) Only emission inspection programs exceed the cost effectiveness of diesel retrofits based upon conservative assumptions. Expanding the range of CMAQ projects to include diesel retrofits for construction equipment and off-road machinery in urban areas could be a highly effective way to spend public monies.

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STATEMENT OF STUART NEMSER, FOUNDER/CHAIRMAN, COMPACT MEMBRANE SYSTEMS, INC.

Chairman Voinovich, Senator Carper, members of the committee, I thank you for giving me the opportunity to speak here today. I am Stuart Nemser, Founder and CEO of Compact Membrane Systems in Delaware. I am here to provide the committee with my company's views concerning S. 1265, the Diesel Emissions Reduction Act of 2005, and its potentially very positive impacts.

Compact Membrane Systems (CMS) is a spin-off company of E.I. DuPont Co., based in Delaware. We currently employ 20 people. CMS has successfully commercialized one family of membrane products which enhance production of ultra-pure water for the semi-conductor field and a second family of products which are used to improve the reliability of electrical transformers. We are now developing a family of membrane products for reducing NOx emissions from diesel engines.

I believe the Diesel Emissions Reduction Act will be very helpful for companies like mine to commercialize our developing technologies. Under the Emerging Technology provisions of the Diesel Emissions Reduction Act, the EPA could allocate up to 10 percent of funds every year towards the development and commercialization of emerging technologies. These funds are to be used to retrofit, re-power, or replace a diesel engine for a bus, medium-duty or heavy duty truck, marine engine, or loco-

motive. In addition, S. 1265, requires that the EPA Administrator establish a program to promote the use of these retrofit technologies. It is my hope that my company will be able to take advantage of this provision very soon.

We began working on our diesel technology because we realized the same need you realized, Senators: the need to reduce the pollution from the existing fleet of diesel engines. EPA's new regulations will require new diesel engines to use low-sulfur fuel and reduce emissions by 2007. This has focused the diesel engine community more on developing new technologies to incorporate in new engines, not how to address the problem of pollution coming from older diesel engines. Diesel engines last a long time, many running for 25-30 years. In order to reduce air pollution emissions, existing diesel engines need to be retrofitted with after-treatment pollution control devices to achieve sufficient reductions, thus the purpose of your bill and our business opportunity.

Our diesel membrane system reduces nitrogen oxide, one of the most difficult diesel emissions to contend with, by as much as 50 percent and with no need to introduce and widely distribute hazardous chemicals throughout our country. CMS membranes are ideal for many retrofit situations as they can be placed between the existing turbo-charger and engine. Since the membrane system is installed at the front end of the engine's system and only needs atmospheric air as the feed, our control technology does not need any special cooling systems or particular levels of sulfur in the fuel.

Our membrane products work best on high-load and high-power diesel engines, so our primary focus has been locomotives, marine engines, and power generators. CMS has made great progress to date including demonstrations of the membrane technology on highway trucks, locomotive engines, power generators, and marine engines. We plan to have completed field demonstrations on a locomotive and a ferry in the next 18 months. If funds are available we will then apply to have the EPA or California Air Resource Board (CARB) certify each platform. Air Liquid/MEDAL, the largest industrial gas company in the world, actively supports this CMS program and encourages the passage of S. 1265. They have written a letter expressing their support of S. 1265, which I ask, Mr. Chairman, be submitted to the record. Air Liquid/MEDAL is likely to supply the commercial membrane modules for this program.

These diesel engines are both heavy NOx emission emitters and have very long diesel engine lifetimes. Thus they represent attractive applications under Act S. 1265. Reduction in these diesel NOx emissions will be good for states like Delaware that suffer from severe ozone air quality problems and the Nation as a whole. In addition retrofitting existing diesel engines with energy and emissions improvement technologies will extend the life of the engines and in most cases pay for itself in a relatively short amount of time.

The development of new technologies is critical to the long-term goal of developing the most cost-effective measures for reducing harmful emissions. Without the funding the Diesel Emissions Reduction Act would provide, emerging technologies from companies such as ours will continue to struggle to fully develop into functioning prototypes ready for commercial application. Related to our aging diesel fleet, with only a limited number of prototypes seeking production, key decision makers will be more inclined to delay implementation of emission reduction technology or favor technologies that are already certified by EPA or California Air Resource Board and therefore have lower initial costs but may have higher long term costs. If allowed, this later approach permits continued pollution and ensuing health problems.

At CMS we feel we are on the cusp of full commercialization, and are currently working with our customers to begin larger demonstrations. Unfortunately, certification of specific engine platforms is very expensive. Also, at our pre-commercial stage, costs of prototype system manufacture are significantly higher than at the later commercial stages. Without the funds your bill contemplates for emerging technologies, it will be difficult for CMS to pursue our diesel engine program in a timely and effective manner.

I understand and appreciate that your bill is not a research bill. The focus of your bill is to get pollution control equipment on the ground and cleaning up the air. However, I applaud your vision to realize that there are a lot of possibilities to do more with the development of new technologies. I am looking forward to competing for these funds, and giving my company an opportunity to help advance diesel engine technology in this country. CMS and other companies will be able to pursue the best technologies to reduce emissions not only in all new engines, but also in existing engines if the Diesel Emissions Reduction Act is passed. The Act will allow our company and others to drive forward emerging technologies to be available in the short-term while allowing us to meet our long-term financial and regulatory goals.

Passage of the Diesel Emissions Reduction Act will be a significant step in the right direction toward controlling the harmful effect of NOx, particulate matter, and sulphur dioxide on the environment. We at Compact Membrane Systems fully support this bill and the financial assistance it will afford emerging technologies to develop and become certified with the EPA and the California Air Resources Board. The diesel emissions problem is a national problem that is in need of federal legislation and funding, and I urge you to pass the Act on behalf of Compact Membrane Systems, Delaware, and the entire nation. Thank you.

STATEMENT OF JON HEMINGWAY, PRESIDENT & CEO, CARRIX, INC.

Chairman Voinovich, members of the subcommittee, and staff, thank you for the opportunity to submit these comments as you consider S. 1265, a bill that will make grants and loans available to States and other organizations to improve air quality by reducing emissions from diesel engines. We find S. 1265 to be very encouraging and support its enactment. This legislation represents a comprehensive, first-time opportunity for the Federal Government to work with non-profit organizations or other qualified entities identified in the bill to improve air quality at our nation's ports by facilitating the phase out of obsolete diesel engines.

With your permission, I would ask that the following comments be included in the hearing record.

CARRIX, INC.

My name is Jon Hemingway, and I am the President & CEO of Carrix, Inc., a Seattle based corporation and the parent company of SSA Marine and other affiliated entities. Carrix reflects the breadth of service offerings that the company and its affiliates are able to provide our customers around the world. While the roots of the company lie in marine terminal services, we have capabilities that extend across all aspects of transportation gateway solutions such as RMS (Rail Management Services), the world's largest operator of intermodal rail terminals and Tideworks, one of the world's leading supplier of marine terminal software solutions that help companies maximize terminal operations and gain unprecedented efficiencies.

SSA MARINE, INC.

SSA Marine operates more cargo terminals at seaports than any other privately held company in the world. Our operations and its diversity of cargo, volumes and commercial models and ports are unprecedented in our industry. We are also the largest marine terminal operator in Southern California, a non-attainment area that I will soon address.

SSA Marine provides a full spectrum of services associated with marine and rail terminal operations. We offer our customers flexible and comprehensive expertise.

The breadth of the company's service offerings include:

- Terminal management
- Stevedoring
- Rail yard operations
- Project development management
- Technology system design, installation and training
- Equipment procurement
- Marketing support
- Trucking
- Warehousing
- Off-dock yard operations
- Feasibility studies

THE PORTS OF LOS ANGELES & LONG BEACH

SSA Marine is the largest terminal operator in the United States with several terminals in the Ports of Los Angeles and Long Beach, the largest gateway for international trade to the United States.

To provide members of the subcommittee a better appreciation of the magnitude of these ports, the Port of Los Angeles encompasses 7500 acres, 43 miles of waterfront and includes 26 cargo terminals, including dry and liquid bulk, container,

break-bulk, automobile, and other facilities. Last year, marine terminal operators moved a record breaking 7.4 million containers through the port.[1]

The Port of Long Beach is also one of the nation's busiest seaports, and it too is a leading gateway for trade between the United States and other trading partners. Approximately 5.7 million containers moved through the port last year. In fact, container throughput has increased by 175 percent since 1990.[2]

In short, the ports of Long Beach and Los Angeles would represent the world's fifth busiest port complex in 2004 if combined, just behind Hong Kong (21.9 million containers), Singapore (20.6 million), Shangai (14.6 million), and Shenzen (13.7 million).

Fifty to seventy percent of the freight coming into these two ports is in transit to United States destinations outside of the immediate port region and the state of California.[3] This fact perhaps best underscores the important contribution California ports provide the nation as they act as a significant gateway for the foreign commerce of the United States.

Given the growing volume of containers managed at these ports and the number of truck moves per day at marine terminals, port pollution and air quality represent a growing concerning within the port community. We share that view. Many marine terminal operators have already initiated individual efforts to replace obsolete, and retro fit more current, diesel engines used at their terminals, and while additional assets might need to be replaced, they are not the primary source of air pollution at ports.

Solutions to satisfactorily curb pollution from trucks at ports have heretofore proven to be somewhat elusive. Diesel engines in on-the-road trucks operating primarily within ports represent a measurable pollution source, and we believe the federal government shares a degree of responsibility to identify and fund a satisfactory resolution to this problem. We further believe a voluntary, incentive-based initiative is the most cost-effective, expedient, near-term strategy that will provide measurable results. The last thing we want is a burdensome, punitive requirement that will unfairly burden drivers.

As I will explain, port truck drivers are enormously important to the efficient movement of containers and represent a critical component to the supply chain.

INTERNATIONAL TRADE, THE SUPPLY CHAIN, AND PORT TRUCK DRIVERS

The Ports of Los Angeles and Long Beach are what we refer to in the industry as "landlord" ports, meaning they lease facilities to marine terminal operators (MTO's), which are private entities.

MTO's have a contractual obligation with the ocean carrier to provide a wide array of services that include loading and off loading international containers from vessels. Imported containers taken off ships are typically transferred to trains (when marine terminal operators provide on-dock rail capability) or they are put on a chassis where they will be trucked to a distribution center or inland rail depot. They would then be railed to there destination.

The trucking services necessary for port operations are predominately provided by independent owner operator drivers. These drivers are retained by and ultimately provide trucking services to the cargo interest (or shippers), the entity that has title to the contents of the container.

By and large, port trucker drivers (or drayage drivers, as they are referred to in the industry) are generally not employees of the MTO. Inasmuch as they are independent companies, marine terminal operators do not dictate the year, model, engine, or type of truck used by drivers calling their terminals.

It is especially important for the subcommittee to understand that port truck drivers are predominately people who have recently immigrated to the United States, are characterized by low income earning power, and generally lack the financial capability to change out obsolete truck engines and finance new, more efficient models without federal and/or state assistance. This is one reason why S. 1265 is timely and much needed.

The cost and process to enter the port trucker driver market is easy and relatively inexpensive. Independent owner-operator drivers are sometimes operating trucks that have been sold and/or acquired three or four times prior to that power unit finding its way to the port.

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[1]Estimates and Information from the Port of Los Angeles.
[2]Estimates and Information from the Port of Long Beach.
[3]Estimates from the Port of Long Beach and from SCAG study on elasticity of port demand, Spring 2005.

As short haul units, these trucks can therefore include the oldest and dirtiest engines and are the last to be scrapped after the trucks useful life. As you undoubtedly suspect, these power units have a much higher level of NOx and PM level than more modern trucks. Therefore, trucks such as these, and to some extent other off-the-road diesel engines used by terminal operators, represent a portion of port pollution commonly identified (the ship being the other component).

In our opinion, replacing the older, dirty trucks driven by many owner operators involved in port activity has by far the highest impact on air quality per dollar spent of any of the mitigation measures under consideration by our industry and policy makers. Given the diverse ownership and deregulated nature of port trucking, a voluntary, incentive based federal assistance program will offer the public the most practical and expedient way to see a measurable and immediate opportunity to reduce port air pollution at relatively modest cost.

TECHNICAL SUGGESTIONS TO THE BILL

We would recommend the following technical changes to enhance the intent and understanding of S. 1265:

Section 2, Definitions, Eligible Entity, Subpart (3) (A)—add to the following text a port authority or regional, State, local, or tribal Agency with jurisdiction over transportation or air quality; and—

Public port agencies can play a useful and important regional role on matters affecting transportation. Enacted by state governments, many of port authorities are governed by an elected and/or appointed body, such as a port commission. They may or may not necessarily fall under the definition of a State Agency with jurisdiction over transportation, and we therefore believe it would be helpful to clarify this matter by adding them to the bill.

Section 3, Subpart (a)(2)—add to the following text—diesel emission exposure, particularly from fleets, off the road equipment used in ports, or trucks operating in areas designated by the Administrator as port air quality areas.

Section 3, Subpart (b)(2)—add to the following text—the Administrator shall provide not less than 50 percent of funds available for a fiscal year under this section to eligible entities for the benefit of public fleets or fleets calling public property such as port authorities.

Section 3, Subpart (c)(2)(b), Inclusions—add—the quantity of air pollution produced by the diesel fleet, off the road equipment use in ports, or diesel trucks owned and operated by independent drivers call ports served by the eligible entity.

Section 3, Subpart (c)(3)(c)(iii)—add—that receive a disproportionate quantity of air pollution from a diesel fleet including on and off the road diesel engines used in ports—rail yards, and distribution centers.

Section 3, Subpart (d)—add a new section identified as (c) incremental costs associated with a new vehicle if a retrofitted engine is not cost-effective.

Section 3, Subpart (d)(2)—delete in its entirety. This section of the bill is particularly confusing, appears counterproductive to the intent of the bill, and would appear to facilitate litigation.

Section 4(c) (3) (A)—add at the end of the sentence—matching contributions may include cash, in-kind services, or plant and equipment associated with enacting this program.

SSA MARINE SUPPORT FOR S.1265

SSA Marine and the National Association of Waterfront Employers (NAWE) of which SSA Marine is a member, have been diligently working to identify legislation such as this program. We are very encouraged by S. 1265 and support its enactment.

Improvement to the air quality of port communities is an important endeavor. Meaningful change in interstate and international cargo transport cannot occur without federal coordination and assistance so that progress can be made among private industry and federal, state, and local authorities.

With S. 1265 being enacted, the nation's seaports have the first-time opportunity to see the benefits of what we hope will be a successful, incentive based program that promises to have measurable results that will improve air quality, particularly at the ports of Los Angeles and Long Beach. We think this is an important measure to continue the vital role these ports play to our nation's trade while mitigating adverse impacts on local communities.

Thank you for the opportunity to submit these views. We would encourage members of the subcommittee, full committee, or staff to see firsthand some of the things one of our terminals and see what marine terminal operators are doing to minimize truck congestion.

STATEMENT OF STACI R. PUTNEY MCLENNAN, DIRECTOR OF CLEAN AIR PROGRAMS OF THE OHIO ENVIRONMENTAL COUNCIL

The Ohio Environmental Council (OEC) appreciates the opportunity to submit this written testimony to the committee, and thanks Senator Voinovich for submitting the testimony into the record. The mission of the Ohio Environmental Council is to inform, unite, and empower Ohio citizens to protect the environment and conserve natural resources. The Ohio Environmental Council works across the state to unite Ohio's conservation and environmental community to keep watch of Ohio's air and water quality, take action to better environmental policies, and make change for a greener tomorrow.

The Ohio Environmental Council is pleased to offer its hearty support for the Diesel Emissions Reduction Act of 2005. This landmark legislation will help clean-up one of Ohio's and the nation's largest sources of dangerous air pollution: diesel engines.

This legislation is significant for two major reasons. First, emissions from heavy-duty diesel engines contribute to poor air quality—threatening public health, degrading our natural environment, and contributing to failure to meet federal clean air standards. Second, the U.S. EPA's clean diesel rules only address newly manufactured engines, leaving us with a large proble—namely 11 million existing engines which will not turnover for a few more decades.

Fortunately, a broad coalition recognizes these issues and has come together to support the Diesel Emissions Reduction Act of 2005. The Ohio Environmental Council is happy to be part of such a diverse group of stakeholders championing this bill, including industry, the environmental community, air pollution control officials and State and local governments.

Diesel exhaust can be more than just unpleasant; it can be hazardous to people's health. According to U.S. EPA, diesel exhaust not only contains ozone and fine particulate precursors, but over 40 chemicals listed as hazardous air pollutants (HAPs), some of which are known or probable human carcinogens including benzene and formaldehyde. In fact, numerous studies have suggested that pollution from diesel engines contributes to serious public health impacts including asthma attacks, respiratory disease, heart attacks, cancer and preventable deaths. A recent report by the Clean Air Task Force, which used U.S. EPA's own methodology, determined that diesel particulate pollution contributes to an estimated 20,000 preventable deaths in the U.S. each year. Ohio ranked 8th in the nation for health impacts from diesel pollution with 769 preventable deaths, over 14,400 asthma attacks and nearly 84,000 lost work days each year.

Unlike other sources of air pollution, diesel emissions are of particular concern because they are released at ground-level where they are easily inhaled by people. Some populations are more at risk than others, such as children, the elderly and people with respiratory ailments. Children breathe in 50 percent more air per pound of body weight than an adult, making their developing lungs particularly vulnerable to the effects of air pollution. The average school bus ride time for a student is 1 hour each school day. Other populations who live near intersections, truck and bus depots, highways or construction sites are also at increased risk. Occupationally exposed workers such as truck and bus drivers may spend as much as 8 or more hours each day around operating diesel engines. All of these populations feel the effects of diesel emissions regardless of whether or not they also live in a county failing federal air standards.

Diesel exhaust also degrades our natural environment, contributing to acid rain, haze and climate change. Black carbon from diesel emissions may have a significant global warming impact, perhaps similar to that of carbon dioxide. But, black carbon has a shorter life span in our atmosphere which means reductions in these emissions may provide a more immediate climate benefit.

Emissions from diesel engines are a serious contributor to poor air quality. One-third of Ohio's counties, urban and rural, are failing federal clean air standards for ozone and fine particulates, pollutants to which diesel engines are significant contributor. Much of the nation faces a similar burden with an estimated 65 million people living in areas exceeding the fine particulate standard and 111 million people living in areas exceeding the 8-hour ozone standard. States have a limited time span to recommend plans and adopt strategies for meeting these important standards. This legislation could assist such areas with financial incentives to reduce emissions from fleets helping them achieve attainment by the required deadlines.

Diesel engines are long-lived, efficient pieces of machinery, making them the workhorses of industry. Yet, it is this very reason that diesels can be such a problem for air quality planners and the public—they last for decades, operating at outdated emissions standards. It is this "legacy fleet" that is of concern. There are over 11

million existing diesel engines at work today. U.S. EPA's new diesel rules establish emissions standards for newly produced engines, but have little effect on existing engines besides reductions in the sulfur content of diesel fuel. The air quality and public health benefits of the new clean diesel rules for on-road and off-road engines may help in the long run, but will fall short of helping states meet the 2010 timelines for attainment. This legislation could help fill that gap by providing a dedicated funding source and the incentives necessary to assist in efforts to reduce emissions from the existing fleet of diesel engines today.

The Ohio Environmental Council has worked with various stakeholders over the years on clean diesel initiatives, from school district fleet managers to policymakers to planning organizations. One theme is resoundingly similar; there is a distinct lack of funding available to help fleets begin clean-up projects. Cash-strapped school districts and transit authorities have little extra revenue to focus on retrofits, despite the benefits to the riders and community. They need assistance in the form of grants, loans and other incentives so they can begin these projects to help protect public health and meet air quality standards.

Unlike many complex environmental problems, cleaning up diesel engines has a very clear solution. Fleets can employ the Four-R's of diesel clean-up: retrofit with pollution controls, replace older engines, refuel with cleaner fuels and reduce idling to achieve as much as 90 percent reductions in emissions. States and local communities and fleets could greatly benefit from the Federal and State-based grant and loan programs generated by the Diesel Emissions Reduction Act of 2005. The state portion of the program is vital to provide incentives for states to create their own dedicated programs to reduce diesel emissions.

U.S. EPA estimates the Diesel Emissions Reduction Act of 2005 could leverage an additional $500 million, resulting in a net benefit of almost $20 billion with a cumulative reduction of nearly 70,000 tons of particulate matter. The benefit-cost ratio of such a program is 13 to 1.

The Ohio Environmental Council supports the full funding and enactment of the Diesel Emissions Reduction Act of 2005. This program could make a significant contribution to improving the nation's, as well as Ohio's, air quality—protecting public health and our natural environment.

AIR LIQUIDE
MEDAL

Stuart Nemser
Compact Membrane Systems
325 Water Street
Wilmington, DE 19804

7/7/05

Dear Stuart,

We understand that you are testifying at the Senate Hearing that will focus on Bill S. 1265, the Diesel Emission Reduction Act of 2005. From our discussions this bill addresses retrofitting the 11 million existing engines that are on the market today. This bill is consistent with Compact Membrane Systems, Inc. (CMS) emerging technology for 50% reduction in NOx emissions from diesel engines.

Consistent with our support for CMS's NOx reduction technology we at MEDAL and Air Liquide support the passage of this bill. We at MEDAL have core membrane technology that we are desirous of introducing into the market in combination with CMS for diesel engine NOx emission reduction.

Please let me know if I can be of additional help.

Kind regards.

A. C. Young
President & COO

Carper bill - MEDAL 7-05

June 21, 2005

The Honorable George V. Voinovich
Chairman
Senate Subcommittee on Clean Air, Climate Change and Nuclear Safety
410 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Chairman Voinovich:

The more than 5,000 members of the American Road and Transportation Builders Association (ARTBA) commend you for introducing the Diesel Emissions Reduction Act of 2005, S. 1265. This important legislation would provide states and local governments with financial support and incentives to help improve air quality by making possible the "retrofitting" or replacing of older diesel engines. ARTBA strongly supports this measure.

While the quality of the nation's air continues to improve, new federal Clean Air Act standards for ozone and particulate matter threaten to thrust hundreds of communities out of compliance. As a result, these areas risk having their federal highway funds withheld. Denying states funds for needed highway improvement projects would only exacerbate the traffic congestion that leads to increased motor vehicle emissions.

Your legislation would provide a constructive solution to this challenge by establishing a source of revenue for voluntary programs to upgrade diesel engines, including those used in the transportation construction industry, to reduce their emissions. ARTBA has long believed the federal government should be a partner with our industry in the effort to reduce off road diesel emissions. To this end, we worked with the Bush Administration during the development of its 2004 diesel engine regulations. We also recently testified before the House of Representatives that legislation to reauthorize the federal highway and transit programs should allow states to use federal Congestion Mitigation and Air Quality Program funds for diesel retrofit initiatives.

The Diesel Emissions Reduction Act is critical legislation that will help transportation construction firms meet federal requirements by facilitating the use of cleaner burning diesel engines. We thank you for your leadership on this matter and pledge to work for enactment of S. 1265.

Sincerely,

T. Peter Ruane
President & CEO

PRIDE. Transportation Construction
THE ARTBA BUILDING, 1010 MASSACHUSETTS AVENUE, N.W., WASHINGTON, D.C. 20001
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ASSOCIATION OF
AMERICAN RAILROADS

Office of the President
Edward R. Hamberger
President and Chief Executive Officer

June 21, 2005

The Honorable George Voinovich
Chairman
Subcommittee on Clean Air, Climate Change and Nuclear Safety
Committee on Environment and Public Works
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

The Association of American Railroads (AAR) is pleased to endorse S. 1265, the "Diesel Emissions Reduction Act of 2005." The legislation would authorize $1 billion over five years for grant and loan programs to promote the reduction of diesel emissions.

Section 3(d)(1) of S. 1265 stipulates that federal diesel emissions grants and loans may be used to fund the costs of retrofit and idle reduction technology for "a locomotive." Likewise, Section 3(c)(3)(C)(iii) states that the Administrator shall give priority to proposed projects that serve areas "that receive a disproportionate quantity of air pollution from a diesel fleet, including ports, rail yards, and distribution centers..."

We further understand that Section 3(c)(3)(F) of the bill, which gives priority to proposed projects that "use diesel fuel with a sulfur content of less than or equal to 15 parts per million," is not intended to diminish the eligibility of railroad locomotives for federal funding. Your staff has assured us that this is not the case and that any misunderstanding in this regard will be clarified through explanatory language as the legislative process moves ahead.

Thank you for your leadership on this important issue.

Sincerely,

Edward R. Hamberger

THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA
333 John Carlyle Street, Suite 200 • Alexandria, VA 22314
Phone: (703) 548-3118 • FAX: (703) 548-3119 • www.agc.org

STEPHEN E. SANDHERR
Chief Executive Officer

703- 837-5312 (Direct) 703-837-5400 (Fax)
sandherr@agc.org

June 15, 2005

The Honorable George V. Voinovich
United States Senate
Washington, DC

Dear Senator Voinovich:

The Associated General Contractors of America (AGC) thanks you for taking the lead in introducing The Diesel Emissions Reduction Act (DERA) to provide assistance for owners to retrofit their diesel powered equipment. The legislation would establish grant and loan programs to achieve significant reductions in diesel emissions. This initiative could prove to be extremely beneficial to local areas attempting to come into compliance with the Clean Air Act.

The construction industry welcomes this legislation because it will provide the needed assistance to help contractors retrofit their off road equipment. Contractors use diesel powered off road equipment to build projects that enhance our environment and quality of life by improving transportation systems, water quality, offices, homes, navigation and other vital infrastructure. This equipment tends to have a long life, and therefore is in use for many years before it is replaced.

Reducing the emissions from the engines that power this equipment is a costly undertaking and is particularly burdensome for small businesses. Providing grants to aid contractors with the expense of retrofitting is a highly cost effective use of federal funds.

AGC applauds your efforts in taking an incentive approach to addressing environmental concerns. AGC urges that this legislation be enacted quickly so that environmental benefits can be achieved as soon as possible.

Sincerely,

Stephen E. Sandherr

SES/bd

CATERPILLAR®

Vice President

Caterpillar Inc.

PO Box 610
Mossville, Illinois 61552-6100

June 16, 2005

The Honorable George Voinovich
United States Senate
524 Hart Senate Office Building
Washington, DC 20510

Dear Senator Voinovich:

Caterpillar is in full support of the Diesel Emissions Reduction Act of 2005. Thank you for assembling a broad coalition of stakeholders in this bipartisan effort to modernize and retrofit millions of diesel engines across the country. It is impressive to see such a strong coalition of environmental groups, regulators and industry representatives working hard to advance retrofit as a national energy and environmental policy issue.

As a company, Caterpillar has invested more than $1 billion in new clean diesel engine technology. No power source can match the reliability, efficiency, durability and cost effectiveness of the diesel engine. From the late 1980s to 2007, Caterpillar will have reduced diesel emissions in on-road trucks and school buses by 98 percent. When meeting Environmental Protection Agency Tier 4 regulations, Caterpillar will reduce emissions for off-road machines an additional 90 percent by 2014. This ensures that clean diesel engines will continue to be the workhorses of our economy for years to come.

Our customers who operate fleets of buses, trucks, construction machines and the equipment that safeguards our homes and lives in non-attainment areas are very interested in retrofit technology. However, they need a nationally consistent approach to address these challenges. Your bill, which focuses on grants and loans, wisely lets the market determine the right technologies for various product applications. Retrofitted engines last longer and, most importantly, have fewer emissions.

Thank you again for your commitment to this legislation. You can count on Caterpillar's support as the bill moves forward in Congress.

Sincerely,

James J. Parker

CHAMBER OF COMMERCE
OF THE
UNITED STATES OF AMERICA

R. BRUCE JOSTEN
EXECUTIVE VICE PRESIDENT
Government Affairs

1615 H STREET, N.W.
WASHINGTON, D.C. 20062-2000
202/463-5310

June 21, 2005

The Honorable Daniel Akaka
U.S. Senate
Washington, D.C. 20510

Dear Senator Akaka:

The U.S. Chamber of Commerce, the world's largest business federation representing more than three million businesses of every size, sector and region, urges your support for an amendment concerning diesel emissions offered by Senator George Voinovich (R-OH) to H.R. 6, the Energy Policy Act of 2005.

Support for the Diesel Emissions Reduction Act of 2005 (DERA) would help states and communities meet Environmental Protection Agency (EPA) ozone and particulate matter air quality standards that put 495 counties across the nation at risk for being placed in nonattainment. Without federal assistance, many counties will be unable to make infrastructure investments that are needed to provide mobility and other critical services to their communities.

Provisions of DERA would establish voluntary national and state-level grant and loan programs to promote the reduction of diesel emissions. The amendment would help build off of proven state and local programs that use new technology to retrofit or replace older truck engines. The EPA estimates that the proposed program that authorizes $1 billion would leverage an additional $500 million from state and local governments, and it would lead to a net benefit of almost $20 billion with a reduction of about 70,000 tons of particulate matter. This would be a 13 to 1 benefit-cost ratio.

The U.S. Chamber strongly urges a "YES" vote on the Voinovich diesel emissions reduction amendment and will consider using votes on, or in relation to, this issue in our annual "How They Voted" ratings.

Sincerely,

R. Bruce Josten

CLEAN AIR **TASK FORCE**

18 Tremont Street Suite 530 Boston, MA 02108 617-624-0234 617-624-0230/fax
www.catf.us

June 16, 2005

Honorable George V. Voinovich
524 Hart Senate Office Building
Washington, DC 20510

Re: Letter of Support for the Diesel Emissions Reduction Act of 2005

Dear Senator Voinovich:

The Clean Air Task Force is proud to be one of the core members of a group of industry, environmental, and government representatives that worked together on a collaborative effort to find ways of reducing harmful emissions of air pollution from existing diesel engines. We strongly support legislation that grew out of that effort, the Diesel Emissions Reductions Act of 2005. We thank you and your staff for your leadership on this important issue.

Heavy-duty diesel engines powering vehicles and equipment such as long-haul trucks, buses, construction equipment, logging and agricultural equipment, locomotives and marine vessels produce a wide variety of dangerous air pollutants, including particulate matter, nitrogen oxides and air toxics. These pollutants, emitted at ground level often in populated areas, produce substantial harm to human health and the environment, up to and including premature death.

Recently, EPA has determined that 65 million people live in areas where the air contains unhealthy levels of fine particulate matter ($PM_{2.5}$), areas that EPA has thus classified as nonattainment for the $PM_{2.5}$ NAAQS. In order for those areas to meet the attainment requirements in the Clean Air Act, substantial reductions of $PM_{2.5}$ emissions will be required. The largest local source of potential $PM_{2.5}$ reductions in most urban areas is the existing fleet of heavy-duty diesel engines. Although EPA has promulgated regulations to substantially reduce emissions from new heavy duty highway and nonroad diesels, many of these engines are long-lived and the air quality benefits of EPA's new engine rules won't be fully realized for more than two decades—a full generation away and long past applicable NAAQS attainment deadlines.

Fortunately, efficient and cost-effective means of substantially reducing diesel emissions are readily available today. For example, diesel particulate filters can reduce diesel $PM_{2.5}$ emissions by about 90% from many heavy-duty diesel engines. Widespread use of such controls could dramatically reduce harmful diesel emissions in our cities and states,

would saves thousands of lives, produce billions of dollars of societal benefits, and help states meet their attainment obligations under the Clean Air Act.

One of the primary barriers to the widespread installation of diesel emission control technology is a lack of resources. Many heavy-duty diesel fleets, such as buses, refuse trucks, highway maintenance equipment, trains and ferries are owned or operated by public agencies with limited resources.

The Diesel Emissions Reduction Act of 2005 will provide $200 per year for the next 5 years to help fund reductions of air pollution from in-use diesel engines, including those operated by cash-strapped public agencies. This will produce human health and environmental benefits far in excess of the costs, and will provide timely assistance to many areas to help them achieve EPA's health based air quality standards for particulate matter and ozone.

CATF urges your support of the Diesel Emissions Reductions Act of 2005.

Very truly yours,

Conrad G. Schneider
Advocacy Director

Cummins Inc.
601 Pennsylvania Ave., NW
North Building, Suite 625
Washington, DC 20004

June 14, 2005

The Honorable George V. Voinovich
United States Senate
Washington, DC 20515

Dear Senator Voinovich:

Cummins Inc. strongly supports the Diesel Emissions Reduction Act of 2005, which establishes a voluntary national retrofit program aimed at reducing emissions from existing diesel engines, and congratulates you on your efforts to bring the diesel industry and environmental groups together on this effort.

The Diesel Emissions Reduction Act of 2005 recognizes the clean air challenges ahead of us and puts in place a system to help address them. In the near future, states must develop plans to address particulate matter and ozone emission reductions to meet the new air quality standards. A federally sponsored voluntary diesel retrofit initiative is a great tool to help states and communities meet these new air quality standards. Your legislation recognizes that one size does not fit all, and there are a number of technologies, which can be implemented to modernize diesel fleets. The term retrofit not only describes an after treatment exhaust device used to reduce key vehicle emissions but also refers to engine repair/rebuild, refuel, repower, and replacement.

The Diesel Emissions Reduction Act of 2005 represents a sound use of tax payer dollars. Diesel retrofits have proven to be one of the most cost-effective emissions reductions strategies. Furthermore, another advantage to retrofits is that reductions can be realized immediately after installation and can be particularly important in metropolitan areas where high volumes of heavy-duty trucks are prevalent and/or where major construction projects are underway for long periods of time.

Finally, I, again, wanted to congratulate you on your efforts to bring our industry together with the environmental community on this legislation. This legislation is truly a model on how to find solutions to environmental problems. It is our hope that the process, which you put together to craft this legislation, can be used to further address the older fleets as well as advance efforts, which recognize the energy efficiency and environmental benefits of clean diesel technologies.

Again, Cummins thanks you for your vision on these issues and looks forward to working with you to pass this legislation.

Very truly yours,

Mike Cross
Vice President, Cummins Inc. and General Manager,
Fleetguard Emission Solutions

Tel: 202 393 8585
Fax: 202 393 8111

Diesel Technology Forum

June 9, 2005

The Honorable George Voinovich
United States Senate
524 Hart Senate Office Building
Washington, DC 20510

Dear Senator Voinovich:

We would like to recognize and thank you for your leadership in developing the Diesel Emissions Reduction Act of 2005. We are especially encouraged by the broad coalition of industry and environmental groups from whom you have successfully sought not just cooperation, but real collaboration in development and support of this important legislation.

As you know, the recent advancements in new clean diesel technology have been substantial. New emissions control devices such as particulate filters, oxidation catalysts, and other technologies will play an important role in the clean diesel system of the future, allowing new commercial truck engines to be over 90 percent lower in emissions than those built just a dozen years ago. And, as we have learned over the last 5 years, these technologies can also be applied to some existing vehicles and equipment. Your legislation will play an important role in helping to deploy more clean diesel retrofit technologies to thousands of small businesses and equipment owners who might otherwise not be able to afford the upgrading of their equipment.

Because of its unique combination of energy efficiency, durability and reliability, diesel technology plays a critical role in many industrial and transportation sectors, powering two-thirds of all construction and farm equipment and over 90 percent of highway trucks. Diesel technology has played and will continue to play a vital role in key sectors of our economy. Thanks to your legislation, diesel technology will continue to serve these sectors and help assure this country's continued clean air progress.

We look forward to continuing to promoting a greater awareness of the benefits of clean diesel retrofits and your legislation.

Sincerely yours,

Allen R. Schaeffer
Executive Director

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www.dieselforum.org

Emission Control Technology Association
1350 "I" Street, NW · Suite 500 · Washington, DC · 20005

June 13, 2005

The Honorable Senator George Voinovich
United States Senate
524 Hart Office Building
Washington, DC 20510

Dear Senator Voinovich:

On behalf of the Emission Control Technology Association (ECTA), I would like to thank you for introducing the Diesel Emissions Reduction Act of 2005, and advise you of our wholehearted support for this legislation. If enacted, this legislation will help states to reduce diesel engine emissions, thereby, strengthening the economy, public health, and the environment.

On-road heavy duty diesel vehicles and non-road diesel vehicles and engines account for roughly one-half of the nitrogen oxide (NOx) and particulate matter (PM) mobile source emissions nationwide. These emissions contribute to ozone formation, fine particulate matter, and regional haze. With more than 167 million Americans living in counties that do not achieve the National Ambient Air Quality Standard (NAAQS) established by the Environmental Protection Agency, it is more important than ever that states and other organizations are given the means to address this growing problem. Clean diesel retrofits are a highly cost effective means of reducing these emissions, costing approximately $5,000 per ton equivalent of air pollution removed. The Diesel Emissions Reduction Act of 2005 will ease the growing burden states are feeling as they strive to reach attainment of these national standards, by providing them with grants and loans for the purpose of reducing emissions from diesel engines.

There are several programs that demonstrate the achievements made by clean diesel retrofits. A prime example is the Metropolitan Transportation Commission (MTC) Retrofit Program in San Francisco, California. As part of the MTC program, more than 1,700 emission control systems were installed on diesel buses. It is estimated that 2,500 pounds of NO_x and 300 pounds per day of particulates will be eliminated as a result of the MTC transit bus retrofit program. We are certain that the Diesel Emissions Reduction Act of 2005 will accomplish similar feats upon its passage.

ECTA thanks you for authoring this important legislation and for your leadership on this issue. We look forward to working with you and your staff to ensure its passage.

Sincerely,

Timothy J. Regan
President

Engine Manufacturers Association
www.enginemanufacturers.org

Two North LaSalle Street
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Chicago, Illinois 60602
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Fax: 312/827-8737

June 20, 2005

The Honorable George V. Voinovich
United States Senate
524 Hart Senate Office Building
Washington, D.C. 20510

RE: Engine Manufacturers Association Supports Diesel Emissions Reduction Act of 2005

Dear Senator Voinovich:

The Engine Manufacturers Association (EMA) strongly supports the Diesel Emissions Reduction Act of 2005. This legislation provides key support to state and local governments and private fleets that will enable them to reduce emissions from existing diesel vehicles and equipment. The national program envisioned in the bill is exactly what is needed to help improve the nation's air quality through voluntary and cost-effective efforts to address emissions from the oldest and highest emitting vehicles and equipment in service today.

EMA represents 27 member companies that manufacture internal combustion engines including the primary manufacturers of diesel engines used in on-highway and off-road applications worldwide. Our members are investing billions of dollars in new engine technology to reduce emissions from diesel engines and bring near-zero emissions technology to the public beginning in 2007. Those efforts will reduce emissions from new engines by over 90%, and will assure that energy-efficient diesel engines will continue to serve the American public for years to come - while at the same time helping to improve air quality.

Your efforts to provide financial support to address the significant challenge of reducing emissions from existing diesel vehicles and equipment will accelerate improvements in air quality nationwide. Importantly, the Diesel Emissions Reduction Act of 2005 does so without additional federal mandates on states or the private sector and recognizes the benefits and efficiencies of local, market-based approaches that will maximize emissions reductions.

On behalf of our member companies, I want to thank you for your commitment to this legislation and your successful efforts to assemble a broad coalition of stakeholders and bipartisan support. EMA members fully support these efforts and will actively work to ensure passage as the bill moves through Congress and the Administration.

Very truly yours,

Jed Mandel

Jed R. Mandel
President

EMA European Office, C.P. 65, CH-1231 Conches, Switzerland
Telephone : +41 22 784 3357 Facsimile +41 22 784 3349

ECOS

THE
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COUNCIL OF
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Webpage: www.ecos.org

July 14, 2005

Via Fax

The Honorable Thomas R. Carper
United States Senate
Washington, DC 20510

Dear Senator Carper:

We are writing on behalf of the Environmental Council of the States (ECOS) in support of the diesel emissions reductions initiatives that are under consideration in Congress. ECOS is the national, non-profit, non-partisan association of state and territorial environmental commissioners. Our mission is to foster cooperation and coordination in environmental management, and to provide for the exchange of ideas, views and experiences among States.

The state environmental commissioners support S.1265, the Diesel Emissions Reduction Act of 2005, which will provide $1 billion in grants over five years for retrofitting diesel engines and idle-reduction programs. States support this as a standalone measure because reduction in diesel emissions is vital to improving public health and helping states meet their air quality goals.

Additionally, ECOS supports Senator Clinton's amendment to Section 1612 of the Transportation Bill, which would make diesel retrofits for on-road and non-road engines eligible for CMAQ funding. This will encourage states to utilize retrofits to get conformity credits, but will still give states the flexibility to choose how they prioritize projects and spend CMAQ funds.

We strongly encourage Congress to pass and fully fund these important air quality improvement measures that will improve public health and the environment. If you have any questions, please feel free to contact us at the ECOS office (202) 624-3677.

Sincerely,

Steven A. Thompson
ECOS President & Executive Director, Oklahoma Department of Environmental Quality

Jane K. Stahl
ECOS Air Committee Chair & Deputy Commissioner, Connecticut Department of Environmental Protection

e

ENVIRONMENTAL DEFENSE

finding the ways that work

The Honorable George V. Voinovich
United States Senate
524 Hart Senate Office Building
Washington, DC 20510

June 16, 2005

Re: Introduction of the Diesel Emission Reduction Act of 2005

Dear Senator Voinovich,

I am writing to express Environmental Defense's support for the Diesel Emission Reduction Act of 2005, which you are introducing today.

As you are aware the U.S. Environmental Protection Agency's regulations establishing new standards for diesel buses and freight trucks and new nonroad diesel equipment will slash diesel emissions by more than 80% from 2000 levels, ultimately saving 20,000 lives a year in 2030. But because these federal standards apply only to new diesel engines and because diesel engines are so durable, the high levels of pollution from existing diesel sources will persist throughout the long lives of the engines in service today.

Your legislation establishing a national program to cut pollution from today's diesel engines would speed the transition to cleaner diesel engines and achieve healthier air well in advance of that schedule. The program design principles embodied in your bill help ensure that the funds for diesel emission reduction projects will be spent in an equitable and efficient manner.

Environmental Defense has long been a proponent of smart policy design. We have promoted market-based and cost-effective programs such as cap-and-trade as a solution to a variety of environmental issues dating back to the 1990 Clean Air Act Amendment.

Environmental Defense commends you on your leadership in cleaning up the existing diesel fleet. We look forward to working with you and your staff to ensure the passage and funding of the Diesel Emission Reduction Act.

Sincerely,

Fred Krupp

Fred Krupp
President
Environmental Defense

INTERNATIONAL TRUCK AND ENGINE CORPORATION
4201 Winfield Road, P.O. Box 1488, Warrenville, IL 60555

T 630 753 3448
F 630 753 2498

PATRICK E. CHARBONNEAU - VICE PRESIDENT, GOVERNMENT RELATIONS

July 11, 2005

The Honorable George V. Voinovich
Chairman, Subcommittee on Clean Air, Climate Change and Nuclear Safety
Committee on Environment and Public Works
Room 410 Dirksen Office Building
United States Senate
Washington, D.C. 20510-6175

Dear Mr. Chairman:

On behalf of International Truck and Engine Corporation and its over 1,000 employees in Ohio, I want to thank you once again for introducing the Diesel Emissions Reduction Act and to express International's strong support for this legislation.

As a leading North American manufacturer of heavy vehicles and diesel engines, International has played an important role in bringing new, low-emitting engine technology to the market. We were among the original strong supporters of the U.S. Environmental Protection Agency's systems approach of coordinating more stringent emission standards for heavy vehicles in 2007/2010 with the requirement for cleaner diesel fuel in late 2006.

International has also been an important player in the market for retrofit of existing vehicle fleets with the new low-emitting technology. Working through our nationwide network of truck dealers, our Green Diesel Technology program has sold over $14 million in retrofit kits, enabling the retrofit of over 3,500 heavy vehicles with emissions-reduction technology.

Technologies are being developed to achieve the 2007/2010 EPA standards that will reduce emissions from new diesel vehicles to near zero. The older diesel vehicles that do not meet these standards may remain on the road for many years, and fleets may not have the resources to upgrade these vehicles with low-emitting technology. The Diesel Emissions Reduction Act provides the funding to leverage the use of these and other emissions technology advances on the current fleet.

As I mentioned to you at the press event in Dayton, we at International look forward to working with you and your staff to achieve final passage of this legislation, which will make an important contribution to cleaning up the nation's air.

Sincerely yours,

Patrick Charbonneau

O·H·I·O
ENVIRONMENTAL
COUNCIL
KEEP WATCH. TAKE ACTION. MAKE CHANGE

June 13, 2005

Honorable George Voinovich
United States Senate
Washington, D.C. 20510

Subject: Diesel Emissions Reduction Act of 2005

Dear Senator Voinovich:

The Ohio Environmental Council offers its hearty support for the Diesel Emissions Reduction Act of 2005. This landmark legislation will help clean up one of Ohio's and the nation's largest sources of dangerous air pollution: diesel engines.

From our initial meeting with you in April of 2004 to discuss the impacts of diesel pollution, we have been impressed by your leadership in addressing this significant contributor to Ohio's, and the nation's, air quality problems. As you know, approximately one-third of Ohio counties are failing federal air quality standards for ground-level ozone and fine particulate matter. Much of the nation faces a similar burden with an estimated 65 million people living in areas exceeding the fine particulate standard and 111 million people living in areas exceeding the 8-hour ozone standard.

Diesel engines contribute significantly to this problem with on-road and off-road diesel engines accounting for roughly one-half of the ozone contributing nitrogen oxide and fine particulate mobile source emissions nationwide. According to EPA, diesel exhaust also contains over 40 chemicals listed as hazardous air pollutants (HAPs), some of which are known or probable human carcinogens including benzene and formaldehyde. Numerous studies have suggested that diesel pollutants contribute to health effects such as asthma attacks, reduced lung function, heart and lung disease, cancer and even premature death.

Fortunately, unlike many complex environmental problems that have very complicated solutions, the clean-up of diesel air pollution is easy. Technologies are available today to retrofit existing diesel engines, reducing emissions from the tailpipe by 20-90% – reductions realized immediately after installation. In fact, due to EPA's Diesel Rules, starting in 2007 we will see the cleanest diesel engines ever coming off production lines. Unfortunately, those rules do not address the 11 million diesel engines in use today. In order to meet EPA's goal to modernize 100% of these existing engines by 2014, states and fleets will need assistance.

That is why the Diesel Emissions Reduction Act of 2005 is so imperative. It will establish an unprecedented $200 million annual national grant and loan program to assist states, organizations and fleets in reducing emissions from diesel engines. These efforts will serve to help counties in complying with federal air standards as well as minimize the health toll of diesel emissions on the public.

I am proud to offer the Ohio Environmental Council's support to you, Senator Voinovich, with the introduction of the Diesel Emissions Reduction Act of 2005.

Sincerely,

Vicki L. Deisner
Executive Director

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OhioEPA
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P.O. Box 1049
Columbus, OH 43216-1049

June 15, 2005

Honorable George V. Voinovich
524 Hart Senate Office Building
Washington, DC 20510

Dear Senator Voinovich,

It has been a great pleasure to meet you and discuss air quality issues with you over these last few months. Ohio's air quality has improved dramatically over the last 30 years. However, as you are well aware, Ohio faces a significant challenge in achieving compliance with the new federal air quality standards for ozone and fine particle matter. We have 33 counties that don't meet the more stringent ozone standard, and all or part of 32 counties that don't meet the more stringent particulate standard.

Diesel emissions are part of the problem in both of those scenarios. That is why I am so encouraged by your efforts to develop bipartisan legislation to provide federal financial assistance for a voluntary diesel retrofit initiative. In many cases, lack of funding is the only thing keeping people from using the cleaner technology that is available.

As Ohio develops its clean air plans for ozone and particulate matter, we need to consider every tool available to us. A funding program to help reduce pollution from diesel engines is a valuable tool.

I look forward to the successful passage of your bill and the clean air benefits it will bring to Ohio and the nation.

Sincerely,

Joseph P. Koncelik
Director

Ohio Rail Development Commission
50 West Broad Street, Suite 1510, Columbus, Ohio 43215
614-644-0306 (telephone) • 614-728-4520 (fax) • www.dot.state.oh.us/ohiorail

July 6, 2005

Brian Mormino, Staff Director
Senate Environmental and Public Works Subcommittee

Dear Mr. Mormino:

I am writing to support Ohio Senator George Voinovich's amendment SA 799 to the H.R. 6 Energy Bill.

I am the Executive Director of the Ohio Rail Development Commission (ORDC), the State of Ohio agency responsible for promoting and developing safe and efficient rail freight and passenger services in Ohio.

The Voinovich Section 741- 743 amendment to promote "Diesel Emissions Reduction" makes sense on many levels. Promoting fuel efficiency does more than reduce pollution from vehicles, it helps to keep all transportation costs down and reduces our dependence on foreign oil by reducing overall fuel needs. The cost reduction element is especially critical in the railroad industry which is one of the most capital intensive industries in the world.

But the value of the Voinovich amendment goes beyond fuel savings, cost savings and emission reductions by fostering innovation in the transportation sector. By providing assistance in getting new technologies off the drawing board and into trucks, busses, boats, and locomotives, it will provide a variety of American industries an opportunity to showcase innovations and export them to the rest of the world.

Thank you for considering our views.

Sincerely,

James E. Seney
Executive Director

MORPC

Mid-Ohio Regional Planning Commission

An association of local governments providing planning, programs and services for the region.

June 14, 2005

The Honorable George V. Voinovich
United States Senate
524 Hart Senate Office Building
Washington, DC 20510

Dear Senator Voinovich:

Our membership, comprised of 41 local governments in central Ohio, has identified our ozone and PM2.5 nonattainment status as one of the most daunting challenges facing our region. Numerous health studies demonstrate the negative health impacts of polluted air, especially for asthmatic children and older adults with heart disease. In addition to these health impacts, failure to clean up our air could inhibit business expansion and investment in transportation.

Freight transportation is one of the primary growth sectors for central Ohio. Yet, we do not want growth at the expense of a diminished quality of life for our residents. Therefore, it is important that we do whatever we can to encourage public and private on and off-road fleets to improve emissions from existing diesel engines that will continue to operate for many years.

MORPC's Air Quality Committee is working diligently with a broad coalition of local governments, manufacturers, industry, health organizations, and environmental groups to identify and implement cost effective ways to reduce nitrogen oxide (NOx) and particulate matter (PM) emissions that contribute to ozone and particle pollution in central Ohio. We strongly support the introduction of the Diesel Emissions Reduction Act of 2005 to provide federal funds to spur local investment in voluntary diesel emission reduction programs. This will be an invaluable tool to help us meet the Environmental Protection Agency's (EPA) ambient air quality standards.

We look forward to working with you to continue to develop support for the Diesel Emissions Reduction Act of 2005. Please let me know if we can be of any assistance.

Sincerely,

William C. Habig

William C. Habig, P.E. AICP
Executive Director

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Columbus, OH 43215-5272

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REGIONAL AIR POLLUTION CONTROL AGENCY
Serving Clark, Darke, Greene, Miami, Montgomery & Preble Counties
117 South Main Street, Dayton, Ohio 45422-1280
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The Honorable George V. Voinovich
Chairman
U.S. Senate
Committee on Environment and Public Works
Subcommittee on Clean Air, Climate Change and Nuclear Safety
415 Hart Senate Office Building
Washington, DC 20510

Dear Senator Voinovich,

The Regional Air Pollution Control Agency (RAPCA) would like to express our support for the Diesel Emissions Reduction Act of 2005. RAPCA is a six county local air pollution control agency charged with protecting the residents of the Dayton/Springfield area from the adverse health impacts of air pollution. We would like to thank you and your staff for offering this vital piece of legislation which will greatly help the citizens of our area breathe healthier air.

Diesel emission reductions offer a significant opportunity in the effort to clean the nation's air. Diesel emissions represent approximately one-half of the nitrogen oxide and particulate matter emissions from the mobile source sector and numerous air toxics.

Like many areas across the county, the Dayton/Springfield area is nonattainment for both ozone and fine particulate matter. RAPCA strongly believes that this bill provides a unique opportunity to the help the area attain these standards, especially fine particulates, as well as reducing the health risks associated with air toxics. Furthermore, many of the diesel vehicles that would be affected by this bill operate in the urban core, thus providing health benefits to many individuals.

Again we would like to express our sincere thanks to you for offering the Diesel Emissions Reduction Act of 2005, which will help millions of Americans breathe easier.

Sincerely,

John A. Paul
Supervisor
RAPCA

STAPPA / ALAPCO

STATE AND TERRITORIAL
AIR POLLUTION PROGRAM
ADMINISTRATORS

ASSOCIATION OF
LOCAL AIR POLLUTION
CONTROL OFFICIALS

S. WILLIAM BECKER
EXECUTIVE DIRECTOR

June 14, 2005

The Honorable George V. Voinovich
Chairman
U.S. Senate
Committee on Environment and Public Works
Subcommittee on Clean Air, Climate Change and Nuclear Safety
415 Hart Senate Office Building
Washington, DC 20510

Dear Chairman Voinovich,

On behalf the State and Territorial Air Pollution Program Administrators (STAPPA) and the Association of Local Air Pollution Control Officials (ALAPCO) – the national associations of state and local air pollution control agencies in 53 states and territories and more than 165 metropolitan areas across the country – I am pleased to offer support for the Diesel Emissions Reduction Act of 2005 and to commend your leadership in introducing this legislation and in working with a broad coalition of diverse stakeholders to draft it.

Emissions from dirty diesel engines pose serious threats to public health and the environment. These emissions are not only substantial contributors to unhealthful levels of ozone and fine particulate matter ($PM_{2.5}$), they cause or exacerbate unacceptably high levels of toxic air pollution in most areas of the country. Although our nation has taken significant action to reduce emissions from new highway and nonroad diesel engines, and additional federal measures are planned to address new diesel marine and locomotive engines, several critical opportunities remain for achieving further reductions in diesel emissions. Chief among them is cleaning up existing diesel engines by retrofitting these engines with new emission control technologies. By authorizing funds for grants and loans to states and other organizations for the purpose of reducing emissions from diesel engines, the Diesel Emissions Reduction Act of 2005 will help states and localities achieve their air quality goals, including attaining and maintaining health-based National Ambient Air Quality Standards for ozone and $PM_{2.5}$ and reducing exposure to toxic air pollution.

STAPPA and ALAPCO are pleased to support this bill and look forward to working with you and other stakeholders as it proceeds through the legislative process.

Sincerely,

S William Becker

444 North Capitol St. N.W. Washington, D.C. 20001 Tel. (202) 624-7864 Fax (202) 624-7863

Union of Concerned Scientists

June 15, 2005

The Union of Concerned Scientists, and our 140,000 members and activists nationwide, strongly support the Diesel Emissions Reduction Act of 2005. This landmark legislation will improve air quality across the country by providing $200 million in grants and loans to reduce pollution from diesel vehicles and equipment.

The exhaust from conventional diesel-powered engines may cause or exacerbate serious health problems such as asthma, bronchitis and cancer, and can even lead to premature death. In addition to its public health toll, diesel exhaust exacts enormous social costs, with escalating health care expenditures, loss of work and school days, and the most costly impact of all - the loss of human lives.

Although standards for new diesel engines offer important health benefits, they do not address the biggest polluters: existing diesel engines. The bulk of diesel pollution now and for the next decade or more come from engines already in use. Fortunately, there are a wide range of readily available cleanup technologies and strategies, including replacing high-polluting engines and retrofitting with emissions controls. The Diesel Emissions Reduction Act will help get diesel cleanup technologies off the shelf and onto today's vehicles and equipment.

UCS is pleased to be part of a diverse coalition of groups—including environmental and health groups, the diesel industry, and public agencies—that is working collaboratively on reducing diesel pollution. This unique mix of voices all agree that reducing pollution from diesel engines is a public health priority, and that federal and state funding is a key strategy to clean up diesel engines.

The Diesel Emissions Reduction Act will accelerate the public health benefits of the new engine emissions standards, and will help all Americans breathe easier.

Sincerely,

Kathleen Rest

Kathleen Rest, Ph.D.
Executive Director

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20/20 VISION, AMERICAN BOTTOM CONSERVANCY, AMERICAN LUNG ASSOCIATION, AMERICAN LUNG ASSOCIATION OF NEW YORK STATE, INC., BREAKTHROUGH TECHNOLOGIES INSTITUTE, CENTER FOR NEIGHBORHOOD TECHNOLOGY, CLEAN AIR TASK FORCE, CLEAN WATER ACTION NEW ENGLAND, ENVIRONMENTAL DEFENSE, ENVIRONMENT NORTHEAST, GROUP AGAINST SMOG AND POLLUTION, LEAGUE OF CONSERVATION VOTERS, MANUFACTURERS OF EMISSIONS CONTROLS ASSOCIATION, NATURAL RESOURCES DEFENSE COUNCIL, OHIO ENVIRONMENTAL COUNCIL, SIERRA CLUB, SOUTHERN ALLIANCE FOR CLEAN ENERGY, UNION OF CONCERNED SCIENTISTS, U.S. PIRG, VALLEY WATCH INC.

June 20, 2005.

DEAR SENATOR,

The undersigned groups are writing to express their support for the Voinovich/Carper bill, S. 1265, the Diesel Emissions Reduction Act of 2005.

As you know, diesel engines emit nearly 40 toxic substances, smog-forming oxides of nitrogen, and fine particulate matter. These pollutants are associated with serious health effects including, heart attacks, asthma attacks, cancer, reduced lung function, and premature death. The U.S. Environmental Protection Agency's regulations establishing new standards for diesel buses and freight trucks and new nonroad diesel equipment will slash diesel emissions by more than 80 percent from 2000 levels, ultimately saving 20,000 lives a year in 2030.

But because these Federal standards apply only to new diesel engines and because diesel engines are so durable, the high levels of pollution from existing diesel sources will persist throughout the million-mile lifetimes of the engines in service today. EPA estimates that 11 million existing diesel engines can benefit from retrofitting and modernization to further reduce pollution. S. 1265 provides pivotal funding through national and state-level grant and loan programs for the voluntary retrofitting of diesel engines, giving nonattainment areas another tool to help them restore healthy air.

Senate bill 1265, the Diesel Emissions Reduction Act, will help speed the transition to a cleaner fleet of diesel vehicles and help all Americans breathe easier. The undersigned groups urge you to support this bill.

Sincerely,

Tom Z. Collina, Executive Director, 20/20 Vision; Kathy Andria, President, American Bottom Conservancy; Paul G. Billings, Vice President National Policy & Advocacy; American Lung Association; Peter M. Iwanowicz, Vice President and Chief Policy Officer, American Lung Association of New York State, Inc.; Bill Vincent, General Counsel, Breakthrough Technologies Institute; Jacky Grimshaw, V.P. Policy, Transportation & Community Development, Center for Neighborhood Technology; Conrad G. Schneider, Advocacy Director, Clean Air Task Force; Cynthia Luppi, Organizing Director, Clean Water Action New England; Mark MacLeod, Director, Special Projects, Environmental Defense; Michael D. Stoddard, Deputy Director and Attorney, Environment Northeast; Rachel Filippini, Executive Director, Group Against Smog and Pollution, (GASP); Tiernan Sittenfeld, Director, Policy and Lobbying, League of Conservation Voters; Dale L. McKinnon, Executive Director, Manufacturers of Emission Controls Association; Richard Kassel, Director, Clean Fuels & Vehicles Project, Natural Resources Defense Council; Staci Putney McLennan, Director of Clean Air Programs, Ohio Environmental Council; Nat Mund, Senior Washington Representative, Sierra Club; Anne Gilliam, Diesel Campaign Coordinator, Southern Alliance for Clean Energy; Michelle Robinson, Washington Director, Clean Vehicles Program, Union of Concerned Scientists; Emily Figdor, Clean Air Advocate, U.S. PIRG; John Blair, President, Valley Watch, Inc.

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